

FIVE YEARS of STATE PLANNING

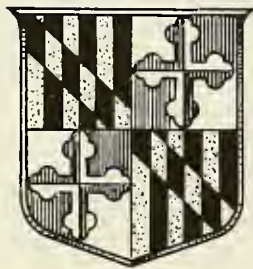
MARYLAND STATE PLANNING COMMISSION

DECEMBER 1938

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FIVE YEARS
OF
STATE PLANNING



MARYLAND
STATE PLANNING COMMISSION

DECEMBER, 1938



RELIEF MAP OF MARYLAND

MARYLAND STATE PLANNING COMMISSION

MAR 16 1939 Gift

LETTER OF TRANSMITTAL

TO THE GOVERNOR AND GENERAL ASSEMBLY OF MARYLAND

GENTLEMEN: The Maryland State Planning Commission has completed five years of its existence. During that time it has issued a number of reports on various important issues confronting the State of Maryland. Under the pressure of time and because of the limitations of funds, the Commission did not consider it desirable to issue annual reports. With the lapse of five years, however, the time has arrived for stock-taking in the particular field of its endeavor.

The present report represents an effort to diagnose the operations of the Commission during this five year period, for the Commission should not be accused of planning in all other fields than in that of its own activities. The efforts of the Commission to integrate its planning methods with the current administrative functions of the State of Maryland have apparently been eminently successful. Participation on the part of the technical staffs and of the lay public in its deliberations has been gratifying and will be extended in the future. Over 125 individuals have undertaken studies and have cooperated in one fashion or another with the Commission during this five year period.

It is believed that some of the major problems of the State have been canvassed and that desirable and helpful recommendations for guidance of State action have resulted.

In developing a long range program for the State, however, five years is a very short time. It is only the beginning of a continuing necessary plan of action for a growing state with ever increasing problems of administration, finance and natural resources development.

The Commission has been severely handicapped in its work by the lack of any important State financial support in the performance of its duties. The total State contribution to the entire five years of its activity has been approximately \$9,000. The Commission, of course, serves without pay. If Federal and private support were curtailed, and this is likely to occur in the immediate future, the activities of the Commission would be seriously hampered. The State must decide in the immediate future whether the kind of function which the State Planning Commission performs should be perpetuated and extended or whether it should be abandoned.

Since the operations of a planning agency are necessarily, in many instances, of highly technical character, it is important that the general public, as well as the Legislative Assembly, should have some clear idea of the activities engaged in and of their impact upon the policies of the State. A conscious effort has been made therefore to prepare this report in more popular and less technical language and form than is the custom of the Commission in other documents.

The Commission is convinced that in the past five years not only have accomplishments resulted in the field of orderly thinking in State matters, but that the desirability of extending this form of activity in the years to come has been demonstrated.

ABEL WOLMAN, *Chairman*
MARYLAND STATE PLANNING COMMISSION

MARYLAND STATE PLANNING COMMISSION

June 1935 to December 1938

ABEL WOLMAN, *Chairman*
Member at Large

JOSEPH I. FRANCE
State Department of Health

NATHAN L. SMITH
State Roads Commission

WILLIAM L. GALVIN
Board of State Aid and Charities

HELENA STAUFFER
Member at Large

FRANCIS D. FRIEDLEIN, *Executive Secretary*

January 1934 to May 1935

ABEL WOLMAN, *Chairman*
Member at Large

LAVINIA ENGLE, *Vice-chairman*
Member at Large

ROBERT H. RILEY
State Department of Health


WILLIAM L. GALVIN
Board of State Aid and Charities

HARRY D. WILLIAR
State Roads Commission

FIVE YEARS OF STATE PLANNING

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FIVE YEARS OF STATE PLANNING

UNFORTUNATELY, it is not given to man to know the future. The most starry-eyed Yogi with the brightest crystal ball is but a fake, his miserable living but a proof that people never cease trying to lift the veil.

Yet there is a new fraternity of thoughtful people, constantly looking ahead, trying to discern in the mists beyond clock and calendar the patterns of life and work and play. No Yogis, these, but the State and Federal planners whose only crystals are the laws of order and the rules of logic, whose only magic words are "coordination" and "integration." They read the past, the present and try to project their lines of reasoning into the future—lines calculated to find coincidence, if followed, but which otherwise might run awry.

Maryland may take pride in being one of the first states to recognize the importance of evaluating and coordinating those public efforts which affect a whole people and the smaller groups that fall under the various political subdivisions. Following closely behind the National Resources Committee, it is trying to do locally what the Federal group is doing nationally—form reasonable programs for future development and shed light on existing problems.

The Maryland State Planning Commission is five years old. It was on December 15, 1933, that Governor Albert C. Ritchie gave final approval to an act, known as "Chapter 39", that had been passed by a special session of the Legislature, to create a State Planning Commission. That act has served as a model for many states which subsequently set up such boards.

It seems fitting that on this fifth anniversary the work of the State Planning Commission should be reviewed in brief. Moreover, it is extremely important that its purposes—based on the work of experts in many fields—be brought clearly into public view to stimulate action so badly needed in many cases.

To appreciate the value of state planning one has but to examine the haphazard developments of the past in nearly all communities of this country. Misfits in the physical layouts of cities, streets and highways built without regard to possible future development, unbalanced concentrations of populations, inefficient uses of land, abuse of natural resources, ineffective fiscal and statistical methods, spur-of-the-moment taxation and *laissez faire* policies where vital economic issues are concerned—these are but a few of the outward and visible evidences of the need of coordination.

Conflicts

It is not difficult to understand why such developments should have taken place. When we consider that Federal, State, county and city or town authority all may be brought to bear, without agreement, on one locality; when we consider that legislative and administrative offices change rapidly, often with radically different commitments, these things are not at all strange. But they speak the more loudly for some agency that is equipped and able, without political commitments, to guide public efforts toward integration and to look ahead and discern future needs.

That was why the State Planning Commission was created, and it is in this advisory capacity that it has tried, and is trying, to serve. The Commission has made every possible effort to obtain the most efficient and authoritative help on each of the projects it has undertaken. In all cases Maryland officials and experts, who know the local nature of our problems, have been enlisted, and in many cases the services of national specialists have been secured.

It is worthy of note here that the National Resources Committee and its predecessors have rendered invaluable aid to Maryland through the loan of these technicians as consultants, familiar as they are not only with the problems themselves, but with their relationships to inter-state and national patterns. In this way the State Planning Commission has enjoyed the services of Irving C. Root, Thomas F. Hubbard, Mark M. Shoemaker, Hale Walker, Gilmore Clark, Earle S. Draper, Malcolm H. Dill, Raymond F. Leonard, A. A. Imberman, Harry A. Grine, and Francis D. Friedlein. And at other times such institutions as the Rockefeller Foundation, the Johns Hopkins University, the University of Maryland, and Fordham University have loaned the services of specialists for technical studies.

Facilities

It was not a very hopeful prospect that faced the State Planning Commission at the time of its creation in 1933. Its only asset then was an excellent idea. It had no money; indeed, no State funds were provided until the fall of 1935 when \$3,000 a year was made available from the contingent fund.

But since its inception the State Planning Commission has had the equivalent of many thousands of dollars worth of services and other facilities from the Federal

Government, from state agencies, from universities and private interests. It has had the loan of excellent consultants. Maryland men and women of foremost rank in their respective fields have donated their services willingly in furthering the work.

The Commission has been largely staffed for clerical, drafting and stenographic help by the Works Progress Administration, averaging from ten to fifteen persons. The Johns Hopkins University, the University of Maryland, the City of Baltimore, the State Roads Commission, and the Fidelity and Deposit Company have furnished office space and equipment.

It may reasonably be estimated that the value of all of these services might exceed \$27,000 a year on the average, although the total State contribution for the last five years has been only about \$9,000. During the first two years of its existence, no state funds were available.

Pressing Needs

It is imperative, however, if this valuable work is to be continued that the Commission have a larger and more stable income; therefore it has submitted a budget request for \$18,500 a year for the biennium of 1939-40 and 1940-41. With such an assured income, the Commission then could have a badly needed full-time director, a full-time technical assistant, part-time consultants, a stenographer, a clerk-typist and some provision for transportation, office rent, equipment, printing, and miscellaneous items.

Until now, many makeshifts have been necessary, such as the office space which the Johns Hopkins University, the University of Maryland and the City of Baltimore have allotted at great inconvenience and cost to themselves in view of the crowded condition of their buildings. With these funds the Commission should be able to work much more freely and to better advantage.

A Choice of Courses

At its inception the State Planning Commission faced a problem of procedure. Should it make an exhaustive survey of all phases of public activity in the State, using this information to detect flaws and move toward correction? Or should it select at the start those distresses most manifest, study them and endeavor to find means of correction?

The Commission chose the latter course, and for five years it has gone to the roots of one problem after another, disclosing causes and, in some instances, offering solutions.

Population Studies

The first effort was directed at a study of the distribution of populations within the State. This was essential, for without a clear view of the location and characteristics of our people it would be difficult to attack their

problems. These data, comprised in several reports have been used in every other study that has been made and they are a valuable source of information that may be used in thousands of ways by public and private interests.

Local Finances

Another pressing condition at the time was the chaotic status of financial affairs in the counties and incorporated towns of the State, with their tax shortages, their alarming increases in bonded indebtedness, their problems of personnel—unwieldy in some cases and insufficient in others. A thorough study of these aspects was made and remedies suggested, ranging from immediate expedients to a suggestion for future consolidation of some of the local taxing units. One proposal has resulted in local governments, for the first time, reporting their fiscal affairs to the State each year. Other suggestions are currently receiving detailed consideration.

Land Use and Resettlement

It was apparent, too, that something should be done about the distressed conditions in Maryland's rural areas. Where farms in some areas were relatively prosperous those in other sections were hardly worth the effort expended on them. A notable study was undertaken of these conditions; poor farmlands were charted and a comprehensive plan eventually was worked out for resettlement of some of the rural folk, and purchase of some of the lands for forests, game preserves, parks and recreational areas. Indeed, some of the acreage was purchased later under Federal allotments for the acquisition of submarginal lands.

Conservation

No state is healthier, financially, than its principal industries and its natural resources. A particularly evil situation has grown up in the depletion of Maryland's God-given marine life. Where once the State had enjoyed world-wide renown for its oysters, its crabs and its food fish, we find today a pitiable condition under which the State is hardly more than average in its seafood. Recognizing the necessity of a sound program to return this vast natural wealth to our people, the State Planning Commission made an exhaustive study of the oyster and crab resources, the causes for their depletion and strongly recommended measures for rehabilitation.

The recommendations were simple; their realization should be simple through easy and inexpensive expedients. Not until these recommendations, detailed elsewhere in this summary, are followed can we expect a return of genuine prosperity to our watermen. Instead it is reasonable to assume that their condition will become steadily worse, with grave social responsibilities to the State.

Highways

Another condition clamoring for attention was Maryland's highways system. Where once the State had led the nation in the excellence and mileage of its good roads, it was found, a quarter of a century later, near the foot of the list in highway health. A study was made by a subcommittee of some of the best engineers of Maryland. For the first time it was stated publicly that Maryland's highway system was an inverted structure; that is, our too-excellent secondary network had been built up at the expense of our primary roads, which carry the vast preponderance of our traffic. The Commission cited the evils, set forth a ten-year program of highway development under which the State might meet its unfortunate traffic situation, reduce the death toll and take its place once more as a progressive state in roads.

Public Works

In view of the fact that future needs in public works are all too frequently forgotten in the operations of successive State and local administrations, two important studies were made—one of public works completed by the State in the decade prior to 1934 and the other of the probable needs for the decade following that year. The first was designed to tell "where we had been"; the other "where we were going". Excluding highways, the report adjusted its recommendations to what it seemed the community could afford to spend on its needs.

Taxes

In the field of tax administration a study was made of the method of collection of motor vehicle revenues, brought about by the difficulties experienced in local governments in Maryland. The Commission recommended some new procedures whereby the high costs of collection would be reduced, efficiency increased and less nuisance imposed on the tax payers.

Drainage Basins

Because of the importance of the two great drainage basins of the State—the Upper Chesapeake and the Potomac River—studies and plans were made for improving the water courses. These surveys were most comprehensive, taking into consideration populations; industries; transportation and communication; topography; geology, soils, cover, climate, temperature and precipitation; and, of course, detailed studies of all the streams in the basins. The many projects recommended were arranged in order of suggested priority.

Maryland Mapping Agency

One of the State Planning Commission's important contributions was the Maryland Mapping Agency, set up with the aid of the University of Maryland. For almost three years this agency has been gathering every conceivable type of map, and eventually it is hoped that

it will be a central repository for all maps made in the State. Not only is it proposed that the Agency shall correlate future map making, but it should be able to save huge sums of money by obviating duplicate and overlapping surveys. In addition, it hopes to bring eventual agreement between all mapping by applying a system of single-plane coordinates. It will encourage engineers to tie all surveys into the Coast and Geodetic Survey Triangulation System instead of using the many diverse and arbitrary starting points common in different localities. The future of this valuable agency, however, rests with the State, since its support cannot look long to incidental help and Federal aid. It is likely that a definite bid for State support will be made shortly.

Baltimore-Washington-Annapolis Area

In November of 1937 the Commission issued a comprehensive report on and recommendations for the great triangle at whose corners are Baltimore, Washington and Annapolis. The development of this region, so important to two big cities and the capital of the State, and thus important to a vast combined population, is regarded as of first importance. To beautify the area, to make best possible use of the worn-out lands, to build roadways suitable to handle the enormous traffic flow that already exists, and is increasing, to create recreation grounds of forest and Bay frontage and to coordinate the suburban development of populations of the cities are only a few of the features of the program, which is summarized at greater length elsewhere herein. Considerable support for the plan already has been voiced.

Economic Studies

Some time ago a series of studies of vital industries of Maryland was inaugurated. Three of these studies already have been made and reports issued—on men's clothing, fertilizer, and iron and steel.

Meanwhile, the State Planning Commission was fortunate in being able to secure the cooperation of Col. J. M. S. Waring of Fordham University in the application to Maryland of a method of sectional economic analysis developed by him for an earlier national economic study for the Works Progress Administration. This is the first study of its kind applied to an individual state. The method develops a base pattern of the State's economy, a system of continuously observing changes in this economy, the causes of such changes and their probable effects. The method is directed toward the development of a more complete knowledge of the State's changing economy, which is a requisite of rational planning.

Public Health Administration

In April 1938 a two-year study of public health administration in Maryland was completed by Rockefeller Foundation experts and a subcommittee of the State Planning Commission. The report recognizes the

splendid work already done in Maryland, but projects a program of reorganization and extension whereby the all-important interests of health can be better served. By rearranging the bureaus and divisions of the State Department of Health, by certain changes in health laws and by effecting a closer cooperation between county and State operatives, it is felt that great benefits will accrue. In addition, there is recommended for consideration a broad plan of county government through which it is hoped that not only health affairs, but all county functions might be improved through the employment of a coordinator to integrate the various functions.

Contributing to this work were the earlier investigations dating back to 1935, of health, medical care and

social welfare in several of the key counties of the State.

Work Relief Appraisal

Last March there was prepared a voluminous report in connection with the United States Community Improvement Appraisal, which enumerates and evaluates the many projects of Federal work relief throughout the State. The reports of many governmental agencies on costs, benefits (social as well as physical) and on the general aspects of work relief are included and reviewed by a subcommittee. Not only do most of the reporting officials approve work relief as opposed to direct relief, but most of them approve heartily the principle of planning as a means of orderly development in the future.

1. POPULATION

THE FUNDAMENTAL consideration of a Democratic form of government in all of its divisions is population. However small the political subdivision, every public effort is for the people—the greatest number of the people.

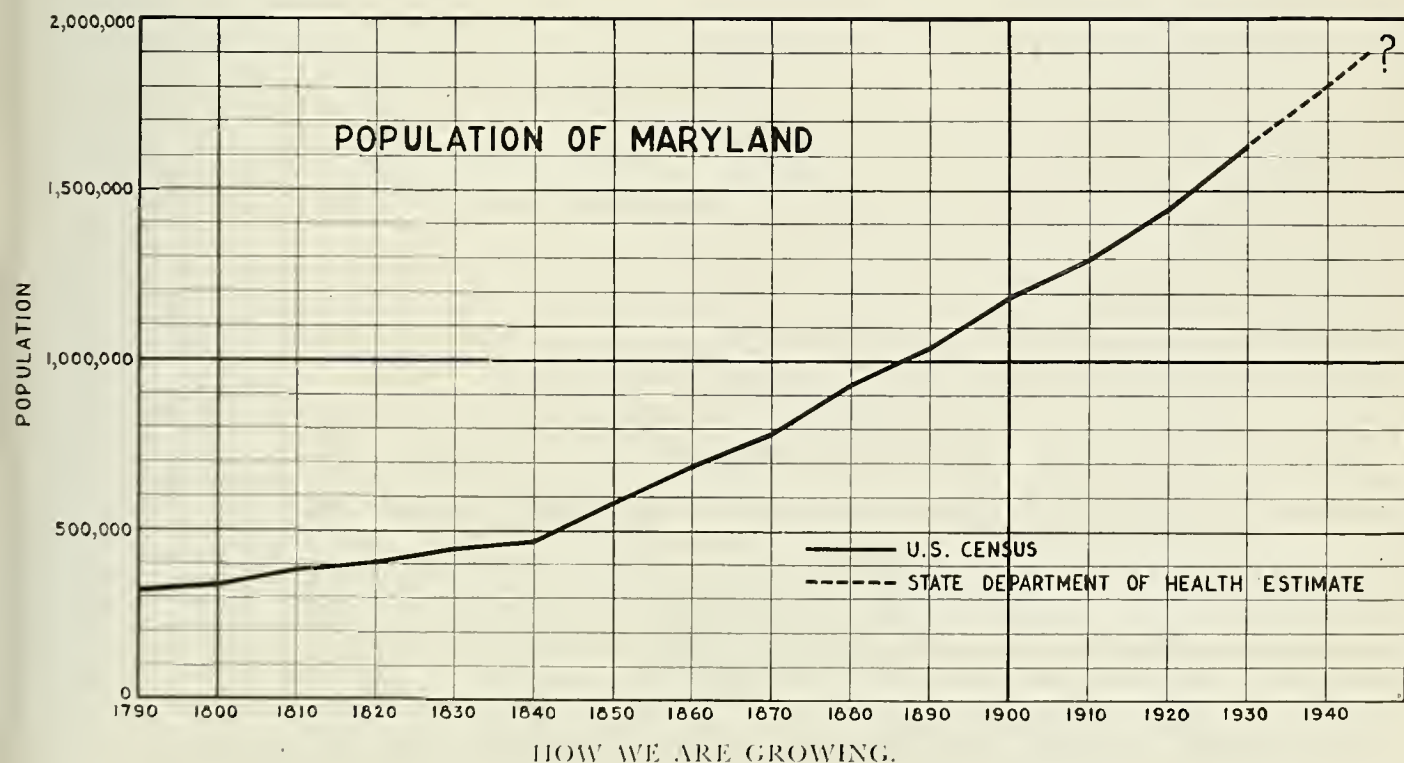
It was natural, therefore, that the first step of the Maryland State Planning Commission should be a study of populations within the State—past, present and prospective. Here are the basic data for ordering of all public affairs; constantly used by the Commission itself and available to all others for many purposes.

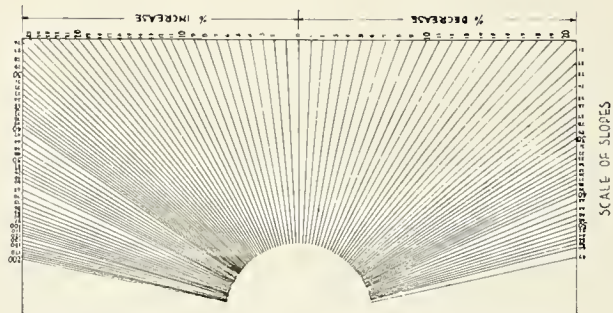
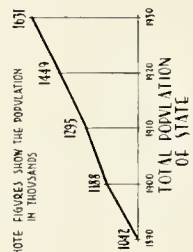
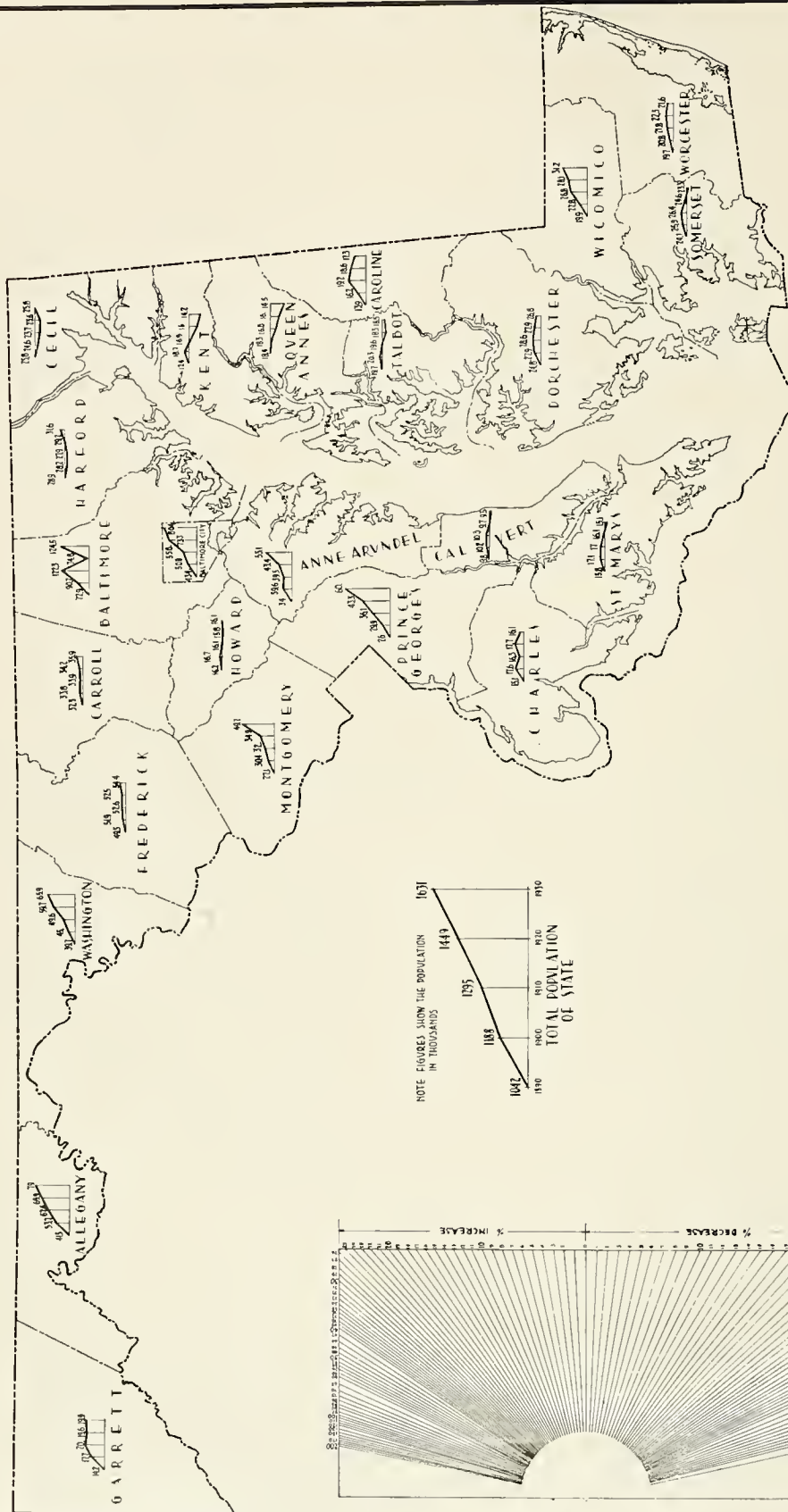
It was with the aid of the State Department of Health that the studies were undertaken soon after the state planning body was instituted, and before the spring of 1934 had gone, there were published three important reports—one the State and county populations of Maryland from 1790 to 1930, and containing the larger divisions of urban population; another the populations of the incorporated towns of the State for the same period, and the third a projection of estimated populations from

1930 to 1945, derived from logical trends shown in the first two reports.

The last population study, published in 1935, was an ambitious one, in which were gathered population figures of all minor civil divisions from 1900 to 1930—even down to small villages and districts. Changes in political lines also were reported.

For use in a study of recreational areas mentioned elsewhere herein, the State Planning Commission is preparing a series of maps of the State showing graphically various characteristics of the population. Some of these maps will show the distribution of 1930 population by spots, each indicating the location of 250 people as accurately as can be determined from available census data, for white and colored population separately as well as for total population. There will also be maps showing the trend of white, colored, and total population increase or decrease by counties. Another group of maps will indicate those characteristics of the 1930 population such as nativity, age groups, habitation, and occupation, by counties.

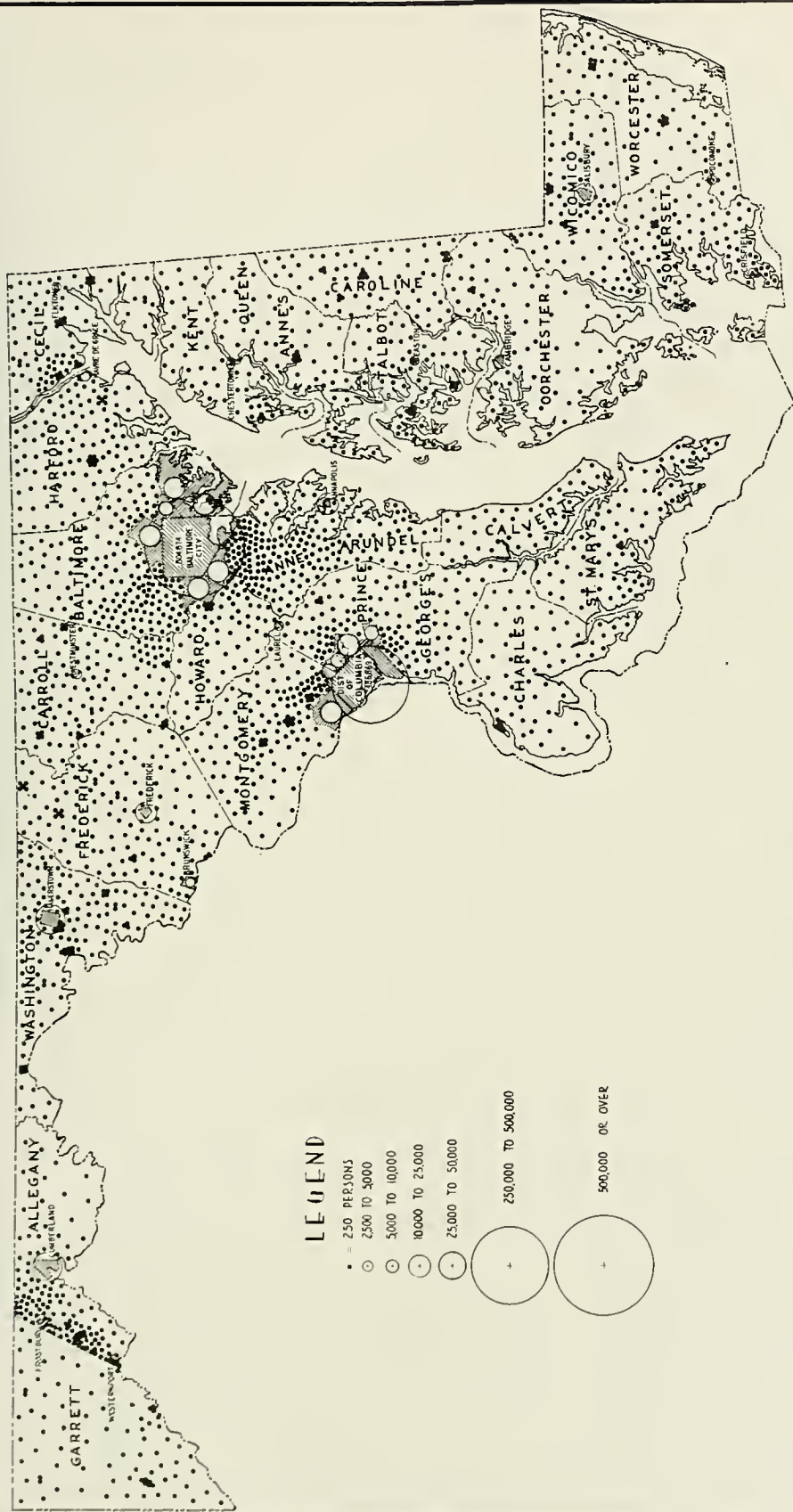




MARYLAND

POPULATION TRENDS 1890 TO 1930

OUR GROWING PAINS ARE NOT UNIFORM.



LEGEND

- = 250 PERSONS
- = 2500 TO 5000
- = 5000 TO 10,000
- = 10,000 TO 25,000
- = 25,000 TO 50,000
- = 50,000 TO 100,000
- = 100,000 TO 250,000
- = 250,000 TO 500,000
- = 500,000 OR OVER

MARYLAND
1930 POPULATION DISTRIBUTION

WE HAD DISTRIBUTED OURSELVES THUS BY 1930.

2. LAND USE ADJUSTMENTS

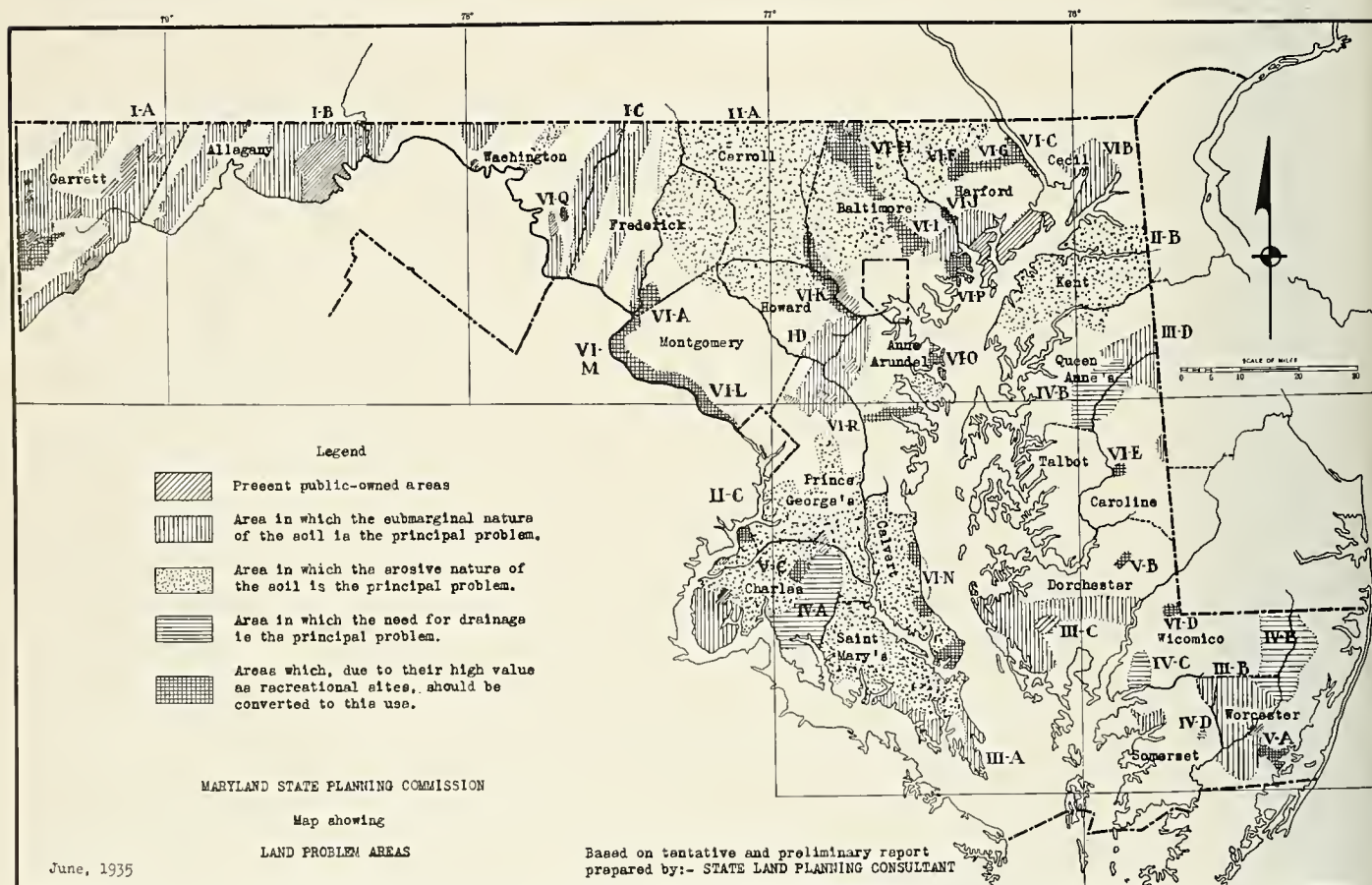
MARYLAND's agricultural picture at the present time presents some rather scrambled aspects. Strange as it may seem, where in many sections farmers are scratching hopelessly at worn-out soil in an effort to make a living, in other more fertile areas large and unwieldy tracts are inadequately farmed, despite their relative fertility.

It was in an effort to determine how best to increase the efficiency of Maryland's farm lands that the State Planning Commission undertook in 1935 its Land Use study, which was reported on in July of that year. We have a picture of rural unemployment, the evils of tenantry, the ravages of soil erosion and injudicious cropping. Again, we find large areas of swamp and lowlands that need only drainage to make them arable and habitable.

The solutions that were offered to these problems were relatively simple. They proposed the transfer of

some 2,200 farm families from 2,000 unproductive farms totaling between 126,000 and 192,000 acres, to richer areas where large and unproductive land holdings might be split up for more economic operation. It was proposed that the land thus desired should be purchased by the State, principally with Federal funds under the Sub-Marginal Land Purchase Program, and the conversion of these areas into State forests, parks and game preserves.

At the time the report was made funds would have been available from the amounts laid aside for resettlement. The program was greatly advanced shortly thereafter by the purchase with Federal moneys of many thousands of acres of sub-marginal land in Garrett, Frederick, Washington, Wicomico and Worcester counties, and the conversion of these areas into park and forest areas.



MANY OF OUR DIFFICULTIES ARISE FROM PROBLEMS INHERENT IN THE LAND.

Valuable Acreage

The State Planning Commission program looked primarily to the welfare of the farm people concerned. Moreover, the liability to the State and local governments was considerable, in view of the fact that many of these farm families were on total or partial relief. But the recommended purchase of sub-marginal lands would by no means be a loss. Instead, there would be great benefits to be derived from new forest preserves, wild life sanctuaries and public recreation places. Indeed, the purchase—considering the fact that the cost per acre would have run from only \$3 to \$15 an acre—would have been considered an excellent investment.

The purchases proposed under the Federal plan would have involved three areas of Garrett County totaling 50,000 acres for recreation, watershed protection, wild life conservation, and forest planting; two areas of

Charles and St. Mary's Counties totaling 12,000 acres for forest planting, timber growing, erosion control, and wild life and water conservation; 15,000 acres in Prince George's County for the same purposes plus recreational facilities; 30,000 acres in Anne Arundel County for recreation, forest, timber planting, erosion control and wild life and water conservation; 35,000 acres in Worcester County; 30,000 in Wicomico; 10,000 in Dorchester and 20,000 in Cecil—all for forest and timber planting and for State game preserves. Of this total of 192,000 gross, 126,000 is under ineffective cultivation or sub-marginal land, and the remainder is in farm woodland.

Important to the report was the detailed study of sub-marginal areas by Dr. Thomas B. Symons, Director of the Extension Service of the University of Maryland, made for the Land Use Section of the United States Department of Agriculture. It was an exhaustive sur-



FARMING THE B-W-A AREA.

vey, taking into consideration soil rating, transportation facilities, topography, crops, markets, schools, established communities, percentage of tenant farmers, percentage of Negro farmers, part time employment away from farms, percentage of relief cases on farms, percentage of tax delinquent land and conditions of the area.

With these data and that compiled by Mark M. Shoemaker, as Land-Planning Consultant, the problem areas were delineated on a submarginal land map. A second map showed the recommended changes in the agricultural sections.

Local Difficulties

The principal difficulties discovered in Allegany and Garrett Counties were mountain topography; in the Washington and Frederick County areas, poor and erosive soil; in Carroll, upper Baltimore and upper Howard Counties, erosive soil; in lower Howard, upper Anne Arundel and upper Prince George's, poor soil; in eastern Anne Arundel, lower Prince George's, Calvert, St. Mary's, and portions of Charles, erosive soil, with poor soil in parts of Charles and St. Mary's; in lower Baltimore, lower Harford, and middle Cecil, poor soil; in Kent and upper Queen Anne's, erosive soil; in lower Queen Annes and upper Caroline, poor soil and good land needing drainage; in portions of Dorchester, Wicomico, and Worcester, poor soil; in the Pocomoke River section of Wicomico and Worcester, good swamp land needing drainage.

The areas into which it was proposed that the farm families be moved are, in the main, near the larger centers of population, with their better marketing facilities. The major portion of the area is in Central and Southern Maryland. In addition to the Catoctin and Savage River park and forest developments, which followed closely on the completion of the report, two other

recreational developments were suggested. One was a waterfront playground in the Elk Neck section of Cecil County, which has subsequently been acquired to a considerable extent by donation and purchase, and the other a public playground and scenic parkway in the Rocks-Deer Creek area of Harford County.

The group responsible for the program gave considerable thought to the Baltimore-Washington-Annapolis area development, which subsequently was more thoroughly treated as a separate program, and which is dealt with elsewhere in this summary. In addition to the recommendations for parkways in this area, consideration was asked for a drive in the Prettyboy Dam area, a park for Baltimore City and another along the Gunpowder Falls connecting Prettyboy Dam and Loch Raven as a scenic parkway.

Still other parks and parkways would be distributed as follows:

A parkway around the head of the Bay in Cecil County near Elkton.

A park and parkway along the Monocacy River from Sugar Loaf Mountain to the City of Frederick.

A State park overlooking the Susquehanna and adjacent to the Conowingo Dam in Harford and Cecil Counties.

A State park in a rugged section called "The Rocks" in Harford County.

A scenic parkway at Little Falls in Baltimore and Harford Counties.

A scenic park around the Great Falls of the Potomac in Montgomery County.

A parkway along the old Chesapeake and Ohio Canal in Montgomery, Frederick, and Washington Counties, linking Washington, Great Falls and the proposed Sugar Loaf Mountain Park.



Courtesy of Westchester County Park Commission

NOW YOU SEE THEM

But it costs less to buy beaches before they've been built up. These show the same spot on Westchester County's Croton Point Beach Park, N.Y.



Courtesy of Westchester County Park Commission

NOW YOU DON'T

Parks at Harpers Ferry, Antietam Battle Field, and the cave area of Maryland.

Three recreation centers along the Chesapeake Bay in the bluff area of Calvert County.

County parks in Wicomico County near Mardella Springs and Caroline County near Denton.

Incorporating in some degree the recommendations of the Baltimore-Washington-Annapolis regional plan is a suggestion for a long range program to protect by purchase and control the Bay waterfront and major streams from undesirable development. It was recommended that zoning laws be passed immediately to protect the waterfront areas until other parts of the plan might become effective. Especially was it thought that the tract between the Bay, the Patapsco and the Magothy rivers, in Anne Arundel County, and another on a peninsula between the Bay, and the Gunpowder and Middle rivers should be acquired as recreational areas, especially for the people of Baltimore.

Forestry Benefits

The State Forester, F. W. Besley, worked in close cooperation with the Commission in the development of this plan, since his department was primarily concerned in the forestry and parks proposals. To the report Mr. Besley contributed some interesting figures. State-owned forests, he reported, totaled about 48,947 acres with 1,800 acres of auxiliary State forest. It was his estimate that there were some 1,175,000 additional acres of forest lands exclusive of farm woodlots, parks, recreational areas, wild life refuges and public hunting grounds, where scientific forestry is not to be found.

About 220,000 acres of this total, he believed, should be cleared for farming, and 15,000 acres should be withdrawn for recreation and conservation, leaving 940,000 acres of woodlands for the practice of scientific forestry. Reforestation of submarginal lands, and the addition of woodlots would add approximately 566,000 acres, bringing the ultimate productive forest area to 1,506,000 acres.

There is no suggestion, however, that the State acquire all of this acreage, but rather that private initiative, where it is able, be encouraged to practice modern forest care. Where private ownership is not in the public interest, it is recommended that the lands be purchased by the State.

There is a commercial connotation in these recommendations as well. It must not be forgotten that Maryland once was an important timber-producing state—a status that she no longer enjoys. When we consider that in 1909 the production of lumber in Maryland was 260,000,000 board feet and that production had dropped by 1933 to slightly more than 10,000,000 board feet, we can appreciate the costs of over-cut forest land.

According to Mr. Besley, around 90 percent of the timber used in the State is imported at a cost of around



Courtesy State Dept. of Forestry

**MUDDY CREEK FALLS IN
SWALLOW FALLS STATE FOREST,
GARRETT COUNTY**

\$4,000,000 a year in freight charges alone. Furthermore, three-fourths of the timber produced in the entire country is consumed in the East. It can be seen, then, that Maryland's position for timber-growing is strategic.

Timber Prospect

It is interesting to note the estimate in the program that only a million dollars spent over a score of years would give back to Maryland a timber supply adequate to all of its needs. There are 157 species of trees of commercial value native in Maryland. Most of these in the past had large markets.

As for game refuges, valuable additions might be made, the report holds, by the acquisition of submarginal tracts



Courtesy of U. S. Forest Service

MANAGED FORESTS YIELD PAYING TIMBER CROPS LIKE THIS.

near Ennals in Dorchester County, near Snow Hill in Worcester County, near Eldorado in Dorchester and near Waldorf in Charles. Practically worthless for any other purpose, these could be added to the 32,685 acres under ownership or lease of the State.

Although Maryland is not troubled nearly so much as many of the states with soil erosion, nevertheless there are some serious problems in certain sections, particularly in Southern Maryland where there has been a great deal of damage to good farm lands because of light soil and rolling topography. The undercutting of banks by water and ice action has contributed to the problem. To overcome this, the report's recommendations consisted mainly of educational measures. Inducements, it was believed, should be offered farms to plant self-protecting crops, to practice deep plowing instead of shallow plowing, and to cut furrows across slopes rather than running with them. Another study by the Commission has dealt more fully with Maryland's problems of erosion, with more specific treatment of the affected sections.

Maryland has lost considerable productive farm land through the encroachment of water. Many of the swamp lands of the Eastern Shore have been due primarily to stoppage of streams serving those areas with the resultant inundation of the lands. To clear the stream beds and drain the swamp lands would add hundreds of acres to Maryland agriculture. Some drainage work has been done in the last several years in these areas by the CCC.

Three sections of swamp land were especially recommended for treatment—the Long Swamp area in Queen Anne's and Caroline Counties, the Pocomoke Swamp in Wicomico and Worcester, which also extends into Delaware, and the Zekiah Swamp area in Charles County. All of them have the additional advantage of fine stands of timber, which might be preserved.

Maryland always has been considered a rich farming area; her people have regarded farming more as a mode of living than as a primary economic factor. The State Planning Commission report looked as much to the return of this stability in home life as it did to the restoration of the economic advantages of good farming. That all of the elements of the plan might work ultimately to the financial and social advantage of the people was the more important.

Recreational Areas Study

There is an ever growing public realization of the social values of recreational facilities. In trying to fit the recreational needs of the State into readjustment in land uses, it is felt that a two-fold purpose can be served.

The State Planning Commission has been doing important work as a part of a nation-wide study of recreational areas and needs in an endeavor to map out for Marylanders a system of parks that will serve as a guide for future acquisitions and developments and also the forestry and game preserve interests of the commonwealth.

This study has been undertaken in cooperation with the National Park Service, the State Forestry Department and the University of Maryland Extension Service and surveys have been made of the entire State. In addition to mapping existing publicly owned areas of recreational significance, the Commission has made an interesting set of analytical maps showing not only the composition of populations by age, occupation, and other census divisions, but also the range of travel for recreational purposes by the populations of the different municipalities of Maryland. These charts show the routes normally followed by groups of people in their search for pleasure and from an analysis of them it is expected that new facilities can be mapped out that would conform with their travel habits.

The report on land use referred to, entitled "Preliminary Statement on Problems of Land Use in the State of Maryland," was made through the cooperation of the following participating officials: F. W. Besley, Thomas F. Hubbard, E. Lee LeCompte, Mark M. Shoemaker, and Thomas B. Symons.

3. BALTIMORE-WASHINGTON-ANNAPOLIS AREA

ONE of the most cheerless, yet important, sections of Maryland is that which lies within the great triangle at whose corners are the National Capital, the eighth largest city of the country and the quaint little capital of the State. Once wealthy farmland in the early years of American history, it is worn out, its chief crop a liberal growth of scrub and brambles.

But if the program advanced by the State Planning Commission in November 1937, is followed, the Baltimore-Washington-Annapolis area would develop into a demonstration of beauty and utility that would serve as a model for the entire nation. It would have State forests and parks, recreation grounds and game preserves, orderly off-the-highway suburban development, modern highways with controlled prospects—all providing for healthy expansion of the cities, rehabilitation of natural resources and safe and pleasant transit for the growing streams of high-speed traffic.

No Cinderella idea, this. No magic wand can be waved to create these things. It is a ten or twenty-year program, but certain steps toward its attainment should be taken immediately if the ultimate benefits are to be realized. By wise protective legislation, sound public investment in cheap land and the speeding up of the badly-needed highway improvement (for immediate consideration a new Baltimore-Washington Parkway, to relieve what is actually the heaviest traveled tourist route in the world, and a new Washington-Annapolis Parkway), important progress toward realization could be made. Most of all, the project needs an immediate planned program, placed in the hands of a Coordinating Committee, extension of the jurisdictions of local planning agencies and State and Federal legislation to project necessary developmental and financial assistance to the program. Even now proposed local planning legislation is being drafted.

Logically, the area should be in the path of the very best of our suburban development, of both Baltimore and Washington. To some small extent, it does contain attractive settlements, but its full potentialities must await a greater physical improvement. Moreover, it should be the natural location of fine forests, with their values in solitude, and State parks, with their recreational advantages. These are necessary adjuncts to city life, and in the big triangle they would be common to some 1,713,000 people living within the 2,500 square miles of the section, only 73,000 (1.5 percent) of them being in rural areas.

The program does not confine itself to any sharp lines between the three cities. Rather, it takes in the zones of influence that lie in the Piedmont section northwest of the Baltimore-Washington boulevard and the part of the Coastal Plain section that runs to the south and southwest of the Washington-Annapolis line. And, of great importance, it embraces one of the State's most valuable, if undeveloped, recreational assets to the east—the great Bayfront and its estuaries.

Already there lie within the Baltimore-Washington-Annapolis triangle the leavens of beautification. The Patapsco State Park, the Fort Meade reservation and the Department of Agriculture's experimental farm show what can be done in land improvement. Greenbelt, the Government-owned model satellite town, is a demonstration of the advantages of planned suburban growth, even though there is no idea in the State Planning Commission's program of publicly-owned, one-piece towns.

Land Use

First consideration in the program is land use. Recalling that only 4.5 percent of the people in the area live in the country, it can be imagined that the best use is not being made of the land. In this connection, it is interesting to read this in the report:

"That the past development of the area has not been all to the good is patent to every observer of its abandoned farms, cut-over woodlands and nuisance-bordered highways. These visible evidences of mistaken progress mar the beauty of its otherwise pleasant communities and prosperous farmlands, its forests and streams.

"Through the area yearly travel three and a quarter million tourists. Pride and pocketbook go hand in hand in determining for the cities and interurban area that this shall be something more than an urban back yard—that farms, homes, places of commerce and industry, parks, beaches and motorways shall be attractive and appropriate for the surroundings of the nation's Capital and its eighth largest city."

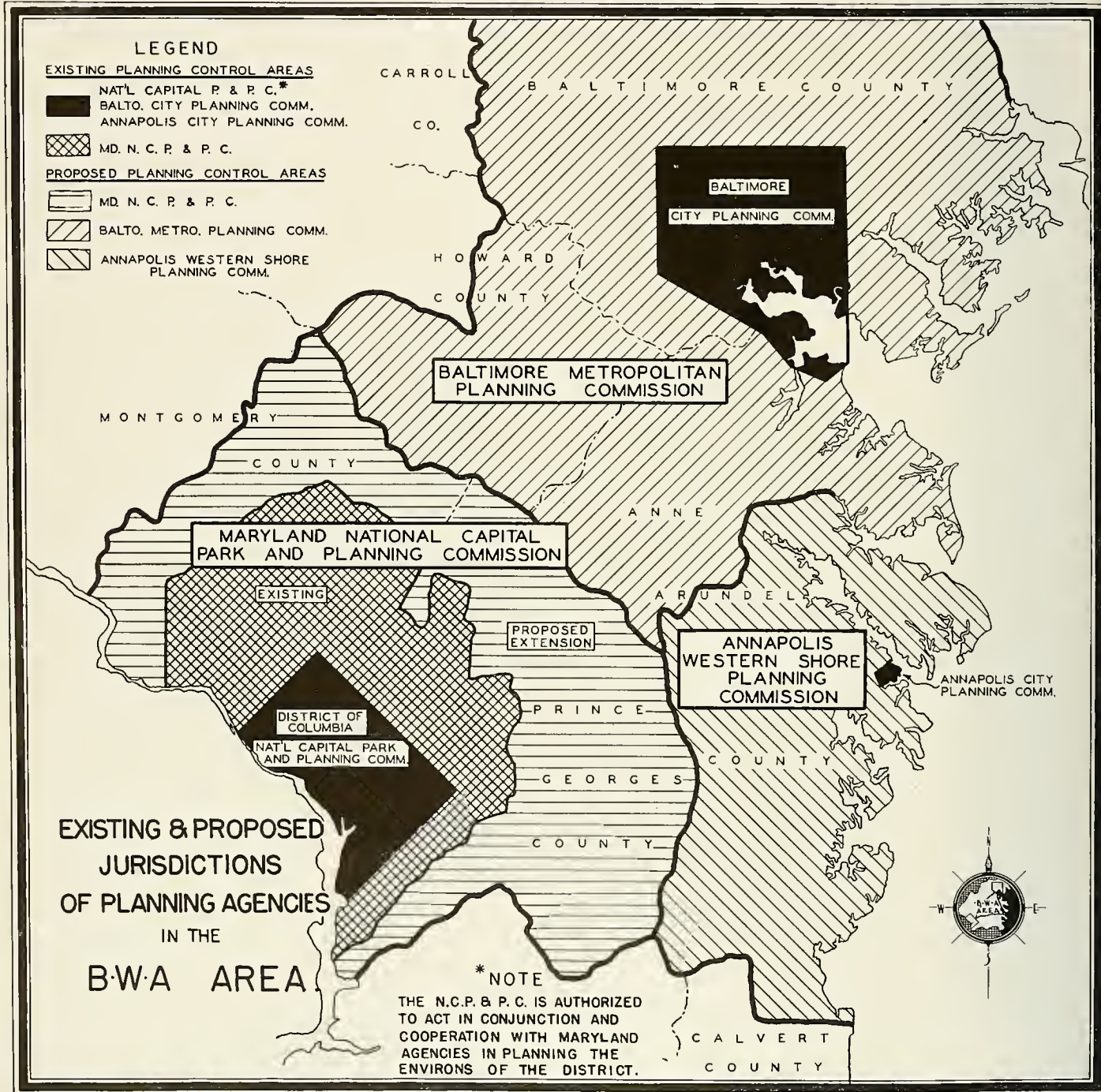
So the suggestion is made that around 100,000 acres of woe-begone land in the triangle (the fertile farmlands of the Piedmont plateau would not come under this scheme) be purchased with public funds, which would reduce the present 20,000 acres now in croplands by only about 10,000 acres. The land should be inexpensive; the farmers, it seems assured, would move readily from the acres where they can wrest only a meagre living from the unproductive soil. Indeed, in the last quarter of a

century there has been a considerable exodus from these rural sections.

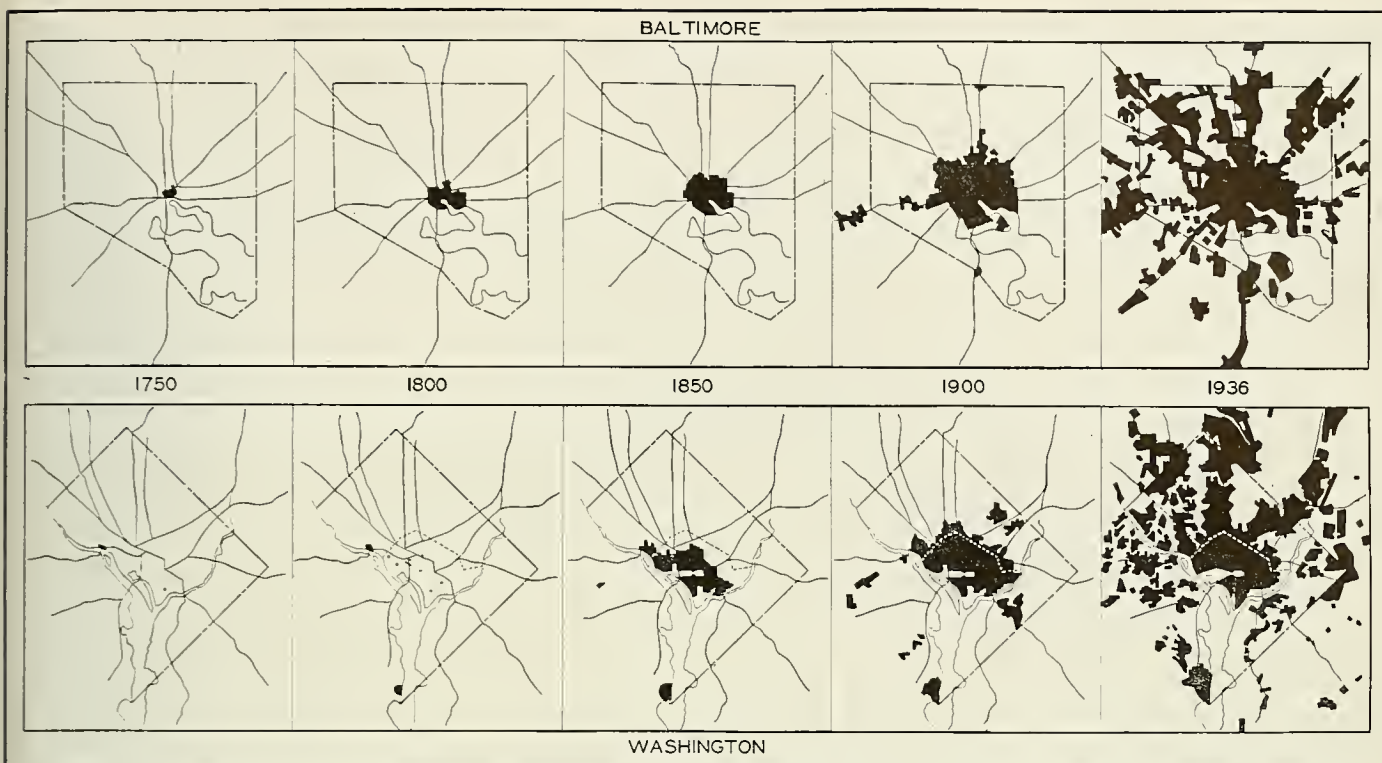
And what would be done with this land? In the first place, it will grow timber where it will not grow farm produce. Its scrub growth is ideally suited to game preservation. Its streams offer extraordinary opportunities for making strip parks and building lovely parkways

and drives. And there would rest in public hands the balance of control of future suburban growth.

This last point is important, and it must be handled adroitly. One has but to ride along the main highways of the area to see the miserable "stringtown" trends that are the result of lack of control. A clearer view is gained from the report in a series of maps representing 50-year



PRESENT GAPS IN JURISDICTIONS OF PLANNING AGENCIES, AND SUGGESTIONS FOR FILLING THEM.



URBAN EXPLOSION: TIME EXPOSURE, 186 YEARS.
BLACK MEANS BUILT-ON LAND.

intervals in population expansion in Baltimore and Washington. Up to 1900, we find a solid, slow growth within city limits; then a veritable explosion of population as the automobile brought decentralization and the urge to move to the country. Only "the country" in this case has been a sad disillusionment for many.

There is no thought of public ownership of the future towns envisioned for the area; rather, a guided development by preserving open space between towns, by zoning, by public purchases of rights in land to enforce proper disposition and by "futuraization" of taxes as a control measure. Working on planning, zoning, subdivision regulation and other control methods at present is the subcommittee for the B-W-A Area with the advice and help of Alfred Bettman, a specialist in planning law and consultant of the National Capital Park and Planning Commission. Soon the subcommittee will have definite legislative proposals in this respect for the State's and local governments' consideration.

Also on the agenda for the subcommittee's early consideration is the matter of more specific recommendations regarding the Baltimore-Washington Parkway and forest, park, and beach acquisition. Urgent action with respect to the latter is especially necessary in view of the rapidly diminishing undeveloped shoreline.

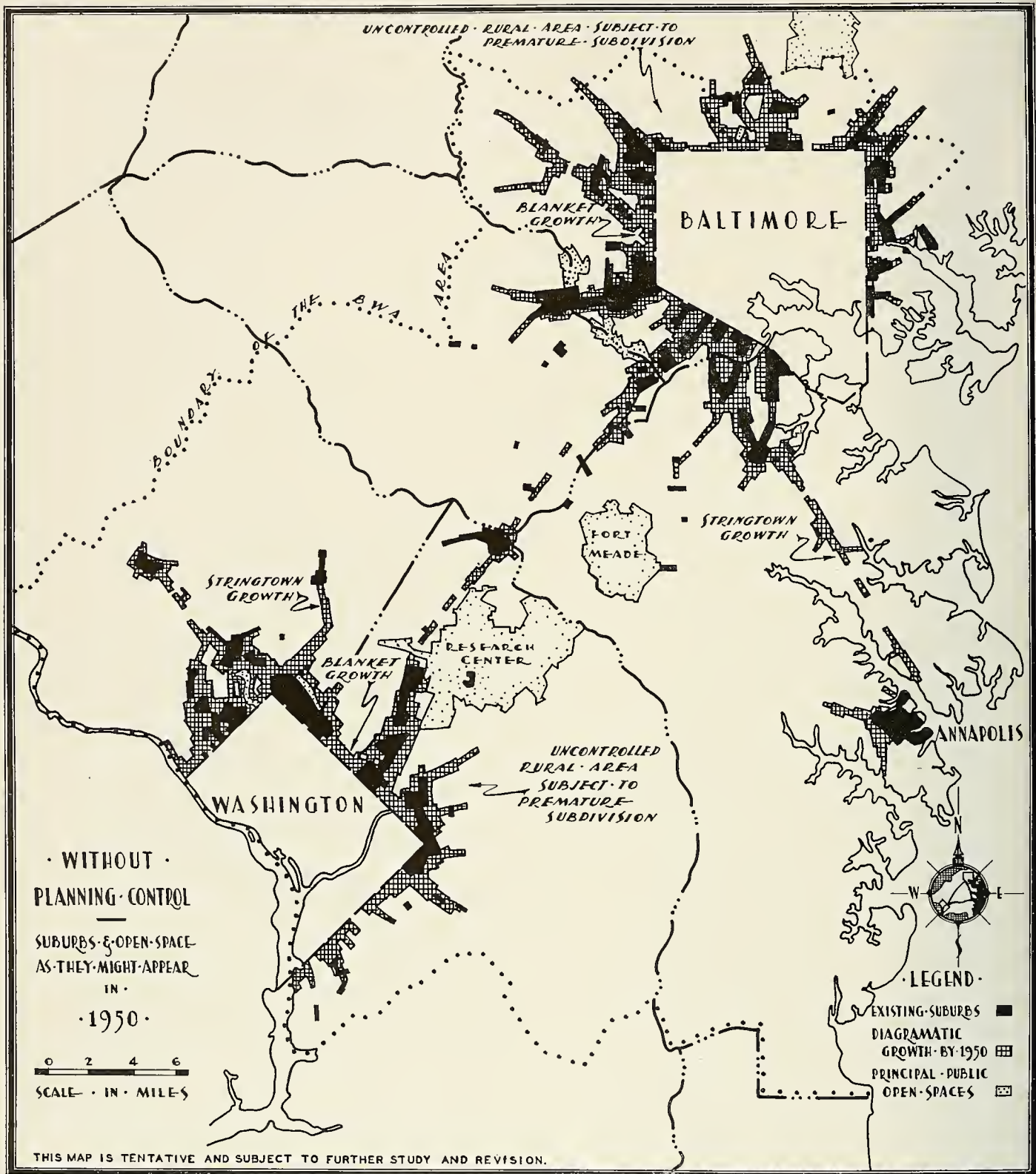
The program looks to the growth of the "satellite" town as an ideal suburban development. By protecting

the new highways, parkways and freeways proposed, there will be no room for stringtown development. Thus the residential development should fall readily into integrated areas off the main highway. Fortunately, there are few industrial complications in the area, and zoning is all that would be needed to control this factor.

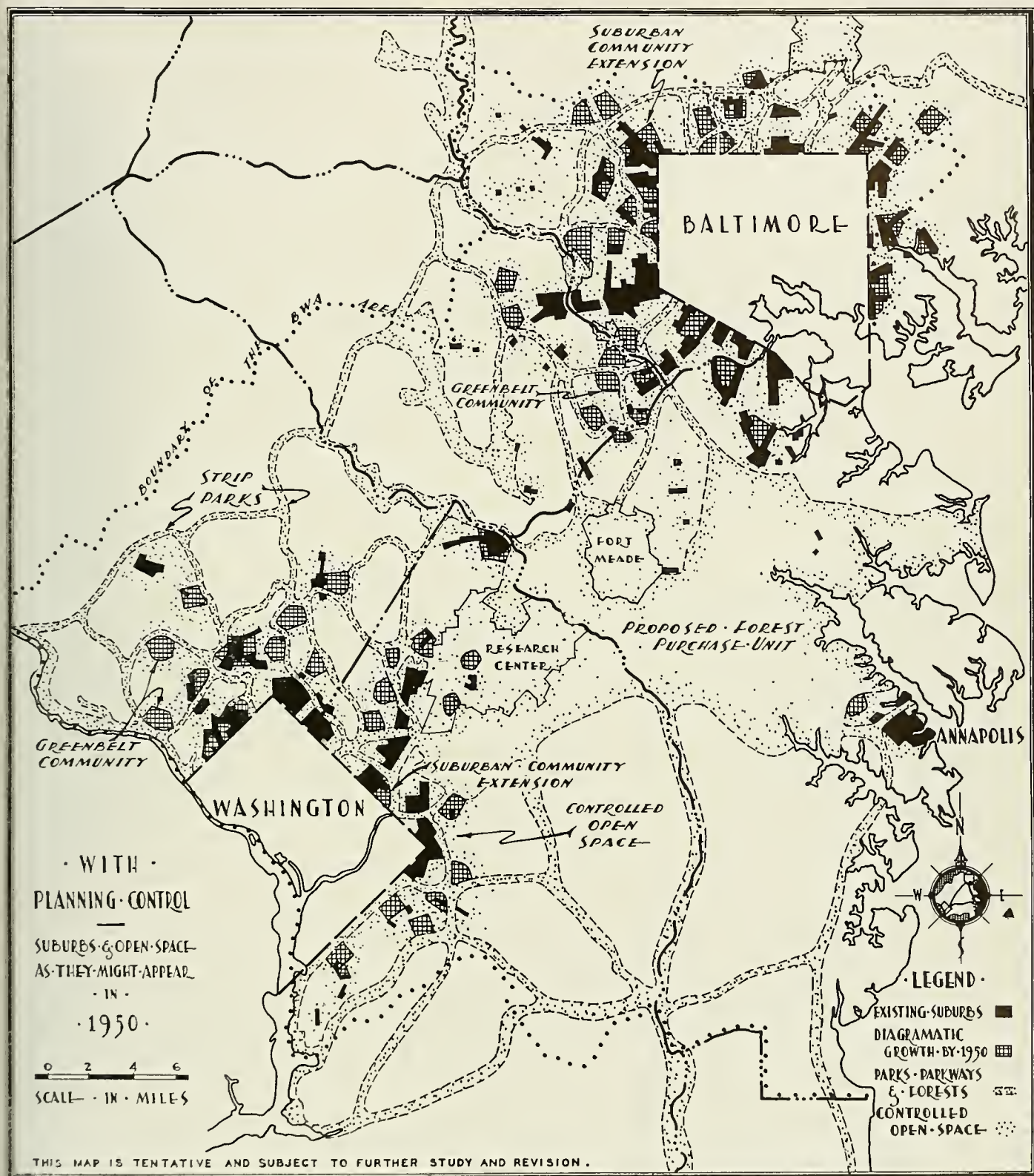
As visualized in the program, the Piedmont section (the area including Catonsville, Green Spring Valley and Ellicott City around Baltimore, and Chevy Chase, Rockville and Silver Spring around Washington) would maintain their trend as districts of estates, suburban farms and relatively prosperous homes.

The Coastal Plain section (Linthicum and Glen Burnie near Baltimore, Severna Park near Annapolis and Berwyn, Capitol Heights and Bladensburg near Washington) would be districts of less costly homes and market gardens.

Forestation of the public lands would not be a difficult phase of the program, once the areas are purchased. The State Forestry Department long has recognized the need of extension of our preserves, not only looking toward a return of Maryland's once-lucrative timber industry, but toward the social benefits—benefits that were lost in urban expansion, but which could play so large a part with the modern convenience of the automobile.



AS IT WILL PROBABLY BE IF NOT CONTROLLED. . . .



... AS IT MIGHT BE IF CONTROLLED.

Baltimore and Washington, as the report points out, have lacked for years the benefits that many other big cities have enjoyed in this respect. Chicago has its Cook County Forest Preserves, New York its Palisades Interstate Park, and Boston and Cleveland their metropolitan reservations, but not so Baltimore. As valuable as has been the Patapsco Reserve, it lacks the important features of a forest, being essentially a State park.

The highly-important procurement of public parks and beaches along the area's great Bay and river fronts is shown as a matter for quick and decisive action. One has but to glance at pictures in the report, showing New York City's magnificent waterfront development, Jones' Beach, and then at typical pictures of Maryland's many shanty shores to appreciate the need of public action.

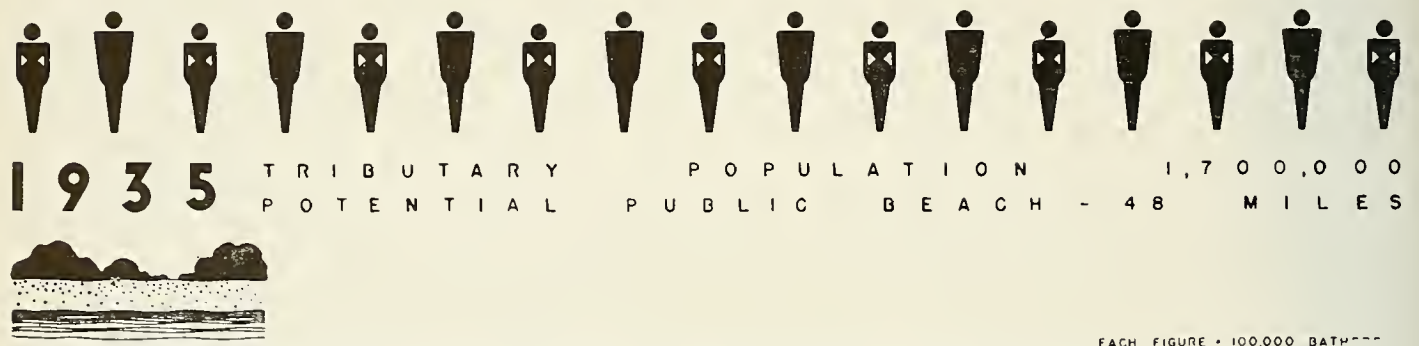
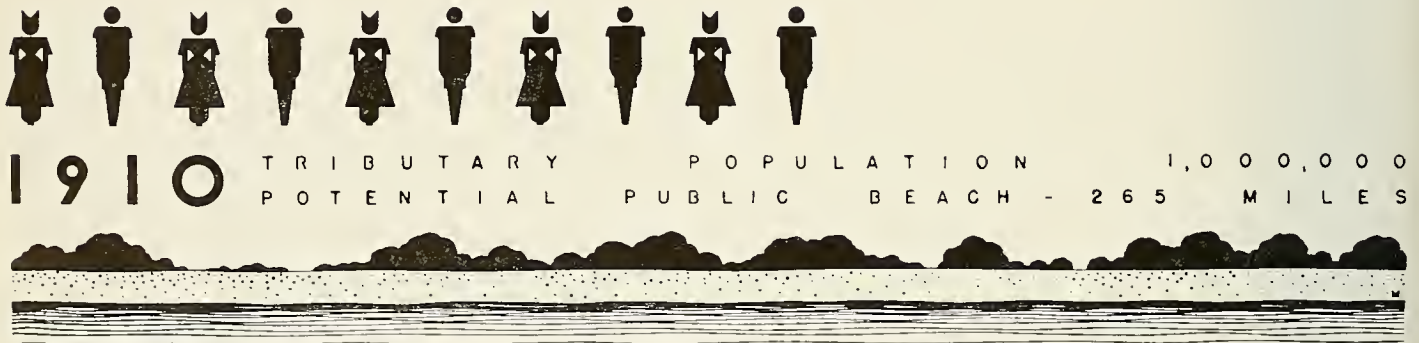
While it is true that hordes of Marylanders and Washingtonians are using the Chesapeake shores for summer residences, the present type of development must be

deplored. Somewhat alarming are the figures which show that, of the 139 miles of shoreline between Baltimore and Annapolis, there are only four miles of Bay frontage and thirteen miles on estuaries that have not been subdivided or privately developed—for the most part unsatisfactorily. Between Annapolis and Plum Point only twelve miles of Bay front and nineteen miles on estuaries have not been developed.

We are reminded that there are few cities with even a fraction of Baltimore's nearby water frontage that have not made large reservations for public benefit. As is pointed out very clearly, we cannot even hope to purchase such lands as cheaply as those spoil areas within the triangle proper, so the State is urged to proceed with its purchases as soon as possible to avoid even higher prices later on.

The Subcommittee proposes to make an early study of recommendations of specific purchase.

V A N I S H I N G B E A C H E S



EACH FIGURE = 100,000 BATHING

OF THE B-W-A AREA SHORELAND, 82 PERCENT HAS HAD PRIVATE COTTAGE RESORT DEVELOPMENT IN THE LAST 25 YEARS. HOW MUCH WILL BE LEFT 5 YEARS FROM NOW?

Highways

As to highways, the program calls for a full awakening and a realization that the present main roads are not only over-crowded (the Baltimore-Washington Boulevard, for example, the heaviest tourist route in the world, carrying more than twice its rated capacity of 10,000 vehicles a day), but are costing the State heavily in life and limb. Accident charts show the ghastly toll, a graphic description recounts the dangers. A map of the area is closely freckled with dots showing the fatalities of a single year, with dark patches of dots showing along the badly engineered Baltimore-Washington Boulevard, with almost two deaths for each of its miles! Other charts show in broad black bands the traffic flows—some of the heaviest in the East.

Three new traffic arteries are recommended eventually between and by-passing the two cities but only one for immediate construction—a four-lane parkway south of the present boulevard. The present highway would be maintained as a heavy-duty road. The other two would be a freeway north of the boulevard and by-passing both Washington and Baltimore to the north, and another south of the proposed parkway and by-passing both cities to the south.

It is interesting to observe that this last suggestion embodied the features that have recently been before the public as part of the State Roads Commission's Bridge Program. It proposed a by-pass and bridge over Baltimore Harbor, a freeway by-passing Washington (but with ingress to both cities) to connect with a Potomac River bridge, the latter soon to be built with Federal funds.

Another four-lane parkway to replace the dangerous Defense Highway between Washington and Annapolis is considered imperative.

The parkways and freeways have different features. Both types are being built by progressive states and cities. The freeway carries unrestricted traffic, but it has restricted access. The parkway has restricted traffic (no trucks) and restricted access as well. The highway has no restrictions.

For the proposed new Baltimore-Washington Parkway some fourteen miles of land already publicly owned, by the State and Federal Governments, would be available on a logical line. The rest, it is believed, could be obtained cheaply, including a broad enough right of way to permit of control of roadsides—the prevention of hot-dog stands, billboards and such undesirable features and the compulsion of entry only at long intervals from lateral roads into which local traffic must feed. The features of such modern roads can be found in the summary of the Commission's Ten Year Highway Program.

Another transportation development recommended for the area is an extension of the new Baltimore-Annapolis divided highway to Solomon's Island as a parkway to replace the present inadequate road and to open up more Bayfront property.

In addition to the general recommendations, the report looks closely into the concomitant needs, such as utilities, railways and airways.

A considerable public sentiment has been noticeable since the report was issued and its recommendations cited in the public press. The State Planning Commission has definitely set out to test that sentiment preparatory to more detailed studies. Solidly behind the program—and standing ready to further it in any way possible—have been the State Department of Forestry, the Commission on City Plan of Baltimore, the Washington Suburban Sanitary Commission, the National Capital Park and Planning Commission, the Maryland-National Capital Park and Planning Commission, the State Roads Commission, the National Park Service, the National Forest Service, the Company for the Restoration of Colonial Annapolis, the Bureau of Plans and Surveys of Baltimore and others.

The report referred to, entitled "Regional Planning, Part IV—Baltimore-Washington-Annapolis Area," was prepared by Earle S. Draper, Malcolm H. Dill, and Raymond F. Leonard in consultation with a subcommittee composed of Joseph W. Shirley, *Chairman*, F. W. Besley, Harry R. Hall, Thomas F. Hubbard, John J. Lang, John Nolen, Jr., Philip B. Perlman, Irving C. Root, Nathan L. Smith, and Amos W. W. Woodcock.

4. OUR SEAFOOD CONSERVATION PROBLEMS

ODDLY ENOUGH in this day of scientific management we find the richly-endowed State of Maryland helplessly watching one of its greatest natural resources fade to a comparative insignificance. Once a mighty fishing ground, the Chesapeake area has become sadly depleted, especially in oysters, which have been second only to salmon among important Atlantic fisheries. If the plight were hopeless and the damage irrevocable the State might well be the object of pity, but there is plenty to support the belief that all of the lost fortunes under the quiet Bay waters might easily be restored.

In 1936 the State Planning Commission, anxious at the damage that was being done, issued a report on conservation problems in Maryland based on a thorough study of the situation by a subcommittee of experts. In this report strong recommendations were made for a saner legislative policy. It would replenish the barren oyster bars by seed oyster cultivation, by private leasing of bottom areas, by the restocking of public bars, by an embargo on seed oysters, a long-term return of shells to the fishing grounds, and greater discretionary powers for conservation authorities; and it would do all of this with a self-liquidating financial structure that would even return an important surplus amount to the general fund.

This report concerns both the oyster and the crab industries, but places special emphasis on the oyster problem. The crab industry could be made safe by very simple means. Indeed, one of the Planning Commission's suggestions—permissive barring of crab taking in November—was adopted by the last Legislature. Thus may the female crab be protected just before the spawning season.

Incredible as it may sound, Maryland's decline in oyster production from the peak year of 1880 has been 83.2 percent, the 1933 catch amounting to only 1,778,506 bushels as compared with 10,600,000 bushels in 1880. This reduction is emphasized even more by the reduction in value of the crops. In 1891 the Maryland catch was valued at \$5,295,866, while the 1933 production was only \$788,197.

In 1880 Maryland's catch comprised 47.5 percent of the entire production of oysters for all of the Atlantic and Gulf states. In 1930, however, it had dropped to 15.4 percent, and in 1932 stood at 16 percent. In other words, in a little over fifty years Maryland has lost her once dominant position and today is only an average oyster-producing state.

"Maryland" Oysters Today

The once important oyster canning industry has practically disappeared and today we see this State which once led the country in oyster production now importing the "selects" and "counts" (large oysters) from other states, so that they may be exported as "Maryland oysters," still trading on the famous old name. And small oysters which once went into canning are now marketed as Maryland's best offer in the fresh state.

Further than this, we see Maryland's oystermen journeying once a year into New Jersey for employment during the fishing of seed oysters from beds which sprang originally from Chesapeake Bay. In areas of the State once prosperous, with fishermen constantly busy, we now find unemployment and relief problems that so far have defied solution. And in the last stand of the Bay's natural supply of oysters we discover tongers and dredgers fishing intensively for small oysters which have no place of appreciable value in the economic scheme.

Just how serious this unemployment situation is can be read in the record of oyster fishing licenses from 1916 to 1933. TONGING licenses decreased by 3,136, or 43 percent; scrapers by 617, or 84.5 percent; and dredgers by 384, or 86.1 percent. It is conservatively estimated that at least 5,000 fewer people were directly employed in taking oysters in 1933 than in 1916. In addition, there has been a tremendous loss of employment in the shucking, canning, and allied industries.

Key to the Program

The key of the State Planning Commission's program of rehabilitation is private leasing of oyster beds that today are practically barren, supplementing public operations and not supplanting them. While other states have increased greatly their own supplies, Maryland has clung tenaciously to the public beds. Few efforts have been made for replenishing the supply. There have been no plantings of seed oysters, while the one effort that began in 1927—that of shell planting—has only helped to arrest the depletion. More than six million bushels of shells have been belatedly placed back in the beds as cultch to catch and develop young oyster spats, but there have been cases where indiscriminate planting has smothered out the young oysters that have remained. There have been cases, too, where shells have been planted at great expense on barren bars without any results.

Maryland laws permit the leasing of Bay areas for oyster cultivation, but they have been so restrictive that they have failed to attract private industry. While Virginia allows private leases of 250 acres of bottom, Maryland's maximum is thirty—hardly a proposition to attract private initiative and capital. It is in the private lessee that the greatest hope of quality, as well as quantity, production of oysters is seen. What Maryland has suffered in the value of its products can be seen in a comparison of the average prices per gallon with those of other oyster producing areas. In 1931 Maryland's average price for freshly-shucked oysters was \$1.17 per gallon. In the same year the average for the Atlantic and Gulf states as a group was \$1.50, for the New England states \$2.20, for the Middle Atlantic states \$2.06, and for Virginia \$1.47. It is noted in the report that if the Maryland oystermen could have enjoyed merely the average value for the Atlantic and Gulf states, their financial position would have been improved by at least \$600,000.

Credit for this higher price in the other states is given chiefly to the private planters. In Maryland 90.9 percent of the oyster production from 1929 to 1932 came from public beds. In the Atlantic and Gulf states 47.4 percent came from private beds, and in the New England

states private leases account for all but a fraction of 1 percent. In the statistical data of the report it is possible to read the effects of this private planting in both price and volume figures.

It is generally admitted among Maryland watermen that the reckless sale of seed oysters in the two decades before the turn of the century started Maryland's precipitous decline. In the spring of 1879 alone, 2,178,750 bushels of small oysters were shipped north for planting. Today we find the once poor fishing ground of Delaware Bay now the leading producing area, and New Jersey no longer depends on Maryland and other states for her seed supply.

First Step—A Resurvey

The first step in the State Planning Commission program would be a badly-needed resurvey of oyster grounds. It has been thirty-two years since the U. S. Hydrographic-Geodetic Survey-Maryland Oyster Commission Survey was made. At that time some 265,000 acres of bottom were charted, but no changes in this acreage have since been made. In consequence, we have no actual record of oyster areas or their condition. This survey would be made by impartial agencies—such as the U. S. Bureau of Fisheries—under the plan, with at least one experienced



Courtesy of State Dept. of Conservation.

THE TONGING FLEET'S IN—BUT WHAT'S IN THE CATCH?

Maryland waterman accompanying the survey party.

Several localized studies have been made, however, in order to determine the condition of certain well-known and once wealthy sections. The results of these studies are rather startling. For example, the Tangier area produces today hardly 24,000 bushels a year, whereas around 1885 it was producing well over 2,000,000. Then there was the region off the shores of Calvert County, between Cove Point and Chesapeake Beach, where once great quantities of very fine oysters were taken. An experienced observer, however, watched the area for two weeks during 1934 and observed during eleven working days only eight dredge boats on the grounds. Of these only one made a serious effort to take oysters. The others made "trial licks" and hurried away in search of richer fields.

The Chesapeake Biological Laboratory estimates that the Calvert County grounds are capable of producing 1,750,000 bushels of oysters a year, and it is interesting to note that this would be approximately as many oysters as are now produced in all Maryland waters in a year. Consider, too, that there are other potentially productive bottoms in the State at least five times as large as the Calvert County bars which now lie fallow.

Rehabilitation Prospects

By leasing appreciable areas of these grounds to private industries and by replenishing the public bars with seed and shells and protecting them by law, it is believed that much of this productivity could be recaptured in a few years. It is never hoped, however, that the public bars will yield very large oysters, but that our future "counts" and "selects" must needs come through private hands.

As planned, the months of April and May would be set aside for the taking of seed oysters, so that employment would be afforded tongs and dredgers during the low spot in the oyster year. It is suggested that the oysters thus taken be distributed in the ratio of 60 percent to public and 40 percent to private bars. A more careful return of shells to bottom which are well supplied with brood stock would give definite assurances of a catch. It is estimated that 5,000,000 bushels of seed oysters could be produced annually in the State within a five-year period. The significance of this figure is apparent when we consider that during recent years the State has been producing only about 45,000 bushels of seed.

From these plantings, the Maryland output of merchandisable oysters is confidently expected to reach some 6,000,000 bushels a year, which would raise the total oyster take to some 10,000,000 bushels within ten years. The social connotation here is clear also, since public fishermen would be called upon to handle the fishing of the oysters from both private and public grounds.

Shell Planting

As important as shell planting is in the restoration of oyster beds, Maryland has had a varied experience in the last few years—one that might be prejudicial to the success of such efforts. There were some worthy efforts, such as that in an experimental area in the Honga River, where 42,000 bushels planted in an area known to abound in free-swimming (larval) oysters, gave back a bushel of oysters for every bushel of shells planted. Another was that reported on Middleground Bar in the Patuxent where 9,000 bushels of shells were planted in 1932 and an excellent catch resulted. But there have been such sad experiences as the 60,000 bushels planted on Harris Rock without any results at all, and another planting on Carrol's Bank in the Patuxent which yielded few oysters. Most of those on the Bank were smothered out, and the bed was injured rather than improved.

It is recommended that no additional taxes or fees be levied on the hard-pressed fishery industries for the consummation of the program. Instead, a 5 percent production tax would be levied on the planters in addition to small rental fees for the bottoms, which it is believed will not only pay the entire cost of these conservation measures but contribute around \$75,000 to general State funds. The fact is cited, too, that if the present bushel tax and shell tax should be kept, they also would contribute important sums.

Meanwhile, it is regarded as paramount that reasonable laws be made to carry out conservation measures. Under the present inflexible statutes there are few instances indeed where the Conservation Commission is able to use any discretionary initiative. So specific are these laws now as to seasons of capture, type of equipment permitted, size limits, etc., that the conservation authorities can perform practically no extraordinary duties. In all of these particulars, it is emphasized, the Commission should exercise full powers under laws that would cover only the general aspects of conservation. The principal legal function would be to protect growing areas and determine, in general, the seasons. The Commission should enjoy the power, for example, to prohibit operations on any area which shows through tests that it has become threatened with serious depletion. To vest many of these duties in the conservation authorities, would give protection during those long intervals between meetings of the Legislature.

For immediate consideration, too, is the insistence that the cull law be enforced more rigidly. There is plenty of evidence that large quantities of oysters under the legal size are being taken by the dredgers and tongs.

Unless there is an intensive culture of seed oysters in now-barren areas and full protection for those areas, Maryland must sink to a place of insignificance in this great industry.

Blue Crab Problem

The problem of the blue crab in Maryland is a simple one. It hinges only on a reasonable cooperation between Maryland and Virginia, since the excursions of the crab between the two states are of great significance. For example, the blue crab spawns in Virginia waters in the lower regions of the Bay. After hatching, the young crabs gradually move northward to Maryland waters where they grow to maturity. Here, also, the mating takes place, and the female crabs in large schools migrate to the lower Bay again for spawning.

As in the case of oysters, there was indiscriminate fishing of the Chesapeake crab for many years, there being no laws to protect the female, or "sponge," from the market. As a consequence, there was a gradual depletion of the supply until in the early 1920's the situation became alarming. Virginia made an important move in barring the sponge-bearing crab from capture. Then an unexpected thing happened. There was an embarrassment of crabs. The production in Maryland increased from 9,646,361 pounds in 1925 to the enormous figure of 36,938,783 in 1930—almost quadrupling in five years!

But this tremendous increase brought a new situation—the Chesapeake crab industry failed to develop new markets for absorbing this vast supply. Markets were glutted; crab prices plummeted. To offset vanishing profits, fishermen caught more, knocking prices still lower. Chaos! Instead of trying to adjust the market, the Virginia Legislature in 1932 repealed its protective legislation, permitting the taking of crabs between April 1 and June 1. Marylanders protested. Virginia was adamant. Great pressure was brought on her Governor to approve the measure.

Partial Solution

It was part of the State Planning Commission conser-

vation program that Maryland should cooperate with Virginia in protecting the sponge crab. It was suggested that the Governor of Maryland seek a conference with the Governor of Virginia to work out the problem with their conservation authorities. Particularly was it considered necessary to protect the female crabs during October and November, for at that time they travel south in large schools, easy to capture in large quantities.

Fortunately, much of the problem has since been solved, at least for the present. The two states have entered into an agreement whereby Virginia has prohibited the taking of the sponge crab in exchange for Maryland's closing of the crabbing season one month earlier.

When it is realized that a single female crab will lay about 1,750,000 eggs, it is readily apparent what damage has resulted from the taking of the sponge crab. With the crabbing season shortened, there is a better chance for an expansion of the crab supply, since a large number of sponge-bearing crabs would be able to reach the spawning grounds.

The only other important recommendation made is that a legal length of 5½ inches be placed for the taking of hard crabs, as against the present minimum of 5 inches. This is suggested because at 5½ inches the crab has reached maturity, meaning that a very much heavier production will result from the same amount of effort.

The only exception to the recommendations for crab conservation would be Worcester County, in view of the fact that its problems differ materially from other sections in the Chesapeake Bay.

The report referred to, entitled "Conservation Problems in Maryland," was prepared by a Subcommittee on Conservation composed of R. V. Truitt, *Chairman*, Mrs. Alfonso Boley, William S. Hamill, A. C. Jones, Frank W. Lawson, Charles A. Lockerman, William Northam, George H. Pouder, Isaac H. Tawes, and William C. Todd.

5. PUBLIC FINANCE

A. LOCAL GOVERNMENT FINANCES

How to purge Maryland of the salient "atrocities" of various tax schemes and to control bonded debt among local governments is a problem that might reasonably give every local government concern. That the evils of inefficiency do exist could hardly be denied by any public servant, but what to do about them has too long been an open question.

It was to illuminate the whole mixed-up condition and to make broad recommendations for correction that the State Planning Commission undertook as one of its early efforts a study of "Certain Financial Aspects of Local Governments in Maryland." In a report issued in 1934, the Commission presented a wealth of facts and figures and marked out a number of avenues for correction of the conditions. The report was prepared by William Paul Walker of the University of Maryland.

There is no criticism leveled here at the property tax itself. Indeed, it is recognized as the best support of local governmental structures—a support less vulnerable to the termites of changing conditions than other sources of revenue. And at the same time it is admitted that abolition of this tax would be both impracticable and hazardous to governmental security.

Recommendations

But there is an attempt to show the inequalities, inefficiencies and inadequacies of present property tax laws and administrative procedures. And for correction—desired because it seems to hold the greatest opportunities for development of the State—the report offers these recommendations:

1. Consideration should be given to the possibilities of providing a more efficient, economical and effective governmental unit by redistricting the taxable resources of the State into governmental units with the following alternative objectives:
 - a. Effecting a full-time one-man, or any multiple thereof, set of county offices.
 - b. Combining certain existing offices or functions of two or more counties or of several areas or units within a county.
 - c. Consolidating the incorporated towns of a given area into one governmental unit.

- d. Consolidating the incorporated towns with the county government.

2. As a step toward better informing the people as to the financial condition of the governmental unit and for introducing better tax collection procedure, the following objectives should be considered:

- a. The individual taxpayer should be acquainted with the financial aspects of the county in the following manner:

A detailed account of the levy printed on the back of the tax bill.

An annual auditor's report setting forth the resources, liabilities, receipts and disbursements in detail, to be published in newspapers or in pamphlet form.

- b. Local governmental units should be required to forward a copy of their annual statement or auditor's report to some designated central State authority.

- c. Greater uniformity among governmental units in respect to the fiscal year and tax collection procedure. Probably one of two dates, January 1 or July 1, for the closing of the fiscal year would serve (including the State government). The former date would probably work a greater hardship on the farmers than the latter.

Uniformity of interest bearing dates for local and State purposes would simplify the office work.

County and other local units might vary their discount provisions in accordance with their current needs for revenue.

- d. An effort should be made to correct the existing condition of a large amount of uncollected taxes by the following procedure:

Reducing the property tax comparable to the economic resources of the property taxpayers. Making the payment of taxes as attractive to the taxpayer as possible to the end that a majority of the taxpayers will form a habit or custom of making voluntary payments.

Making tax payments easier through semi-annual or more frequent installment provisions.

Substituting, in part, other methods of taxation for the State and local property tax.

Providing more stringent laws in relation to tax delinquency and tax sales, after the general property tax has been reduced to a minimum of burdensomeness.

Introducing a better bookkeeping system in the treasurers' offices where the present system is found to be inadequate and obsolete.

- e. Governmental units should be limited in the amount of temporary loans, notes or accounts payable at the end of any fiscal year to not more than 75 percent of the uncollected taxes.
3. As a means of greater safeguard to the use of public credit, the following objects should be given consideration:
 - a. Some policy should be laid down in respect to the referendum privileges on bond issues for county and other local units.
 - b. Greater attention should be given to the phenomenon of overlying debt with its attending possibilities of unduly increasing the debt in relation to the taxable basis of real value. (A consolidation of all incorporated units with the county government might assist in keeping down this compounding of debt.)
 - c. Some central debt control board, composed of State and local representatives, should be made responsible for the reviewing of proposed bond issues in order to discover the existing bonded debt and financial situation in the particular unit and the need for such proposed bonds. Such a body may have only powers to recommend, making their recommendations to the General Assembly, or local authorities, or it may be invested with the power to make a final decision.
 - d. A schedule of the estimated life of the property or improvement acquired through bond issues should be set up for the State, and the life of the bond shall not exceed the estimated life of the property or improvement acquired.

A forward step in line with these recommendations has since been made in the law requiring local taxing units to report their financial condition on a uniform basis to the State Board of Public Works each year. Tightening of the law and expansion of the scope of the reporting would add measurably to the present usefulness of the data.

Variance In Tax Bases

One cannot help but be impressed by the great variance in the tax bases of the counties, ranging from \$5,704,000 in Calvert County to \$171,129,000 in Balti-

more County. There were eight counties in which the taxable basis was less than \$20,000,000 and which had a potential budget of less than \$200,000. The significant point here is that in the low-budget group the cost of administration and of law and order generally is high and this brings about another dilemma—the duties may not be sufficient to justify the full time employment of one person in some counties, while in others two employees on full time find themselves idle for much of it. Hence the consideration of a re-districting of the taxable affairs and resources of the State.

In general, there has been a considerable reduction in the amounts levied by counties in recent years, with a commensurate decline in tax rates. This has been due to several factors: first, an increase in State aid for public schools and a reduction in school operating costs; second, allotments from the State gasoline tax revenues for materials, construction and bonded debt of county roads; third, pay cuts of both State and county officials, and fourth, economies in government.

Although there has been a general reduction in the county levies and a considerable amount of relief to property owners, several cut too deeply and had to increase their levies. In 1935 all but four counties had tax rates of less than \$1.00, with reductions from 1931-32 to 1934-35 ranging from 20 percent in Allegany to 53 percent in Calvert, and the total tax budget of all counties for the fiscal year of 1934-5 was \$10,371,650. To show the great variance in income, it is noted that Calvert County had a tax budget of only \$63,719; Baltimore County's levy was \$2,339,200; nine counties had budgets of less than \$200,000. On a per capita basis, county levies for that year varied from \$5.19 in St. Mary's to \$16.11 in Baltimore County, the average of all counties being \$11.88.

Many people misunderstand the relationship between assessment and tax rates. Because a county has a low tax rate does not necessarily mean that it has a low assessment; indeed, it is quite probable that it has a very high assessment. And conversely, counties with high tax rates may have a low assessment. The report clears this point and calls attention to the State law providing for 100 percent valuation in properties. It would seem, then, that to obtain any agreement in tax administration in the State, 100 percent assessment would be the starting point. Another advantage would be that the local unit would be placed in a more favorable light if it is bearing its just and proportionate share of the State tax.

Schools Largest Item

It is interesting to note that schools are the largest item in county budgets, representing 44 percent of the amount levied for all counties. Roads in recent years have become an item of minor importance, due to the

State assuming county road maintenance and construction, except in three counties. Second in importance was interest and reduction of bonded debt; then came "social control" including health, charity and welfare, and fourth, law and order.

Another argument for the redistricting of governmental units lies in the cost of administration. For example, in some counties boards are required to spend comparatively little time with their public duties, while in others full time is required. Furthermore, in most cases the salaries of commissioners is anything but princely and unlikely to attract competent men. By redistricting, it would be possible, the report suggests, to have full time boards with jurisdiction over much wider areas with a much larger taxable basis and at more attractive salaries.

The report deals fully with the various categories of public expense and breaks down the figures. Among these items, social problems have been of considerable concern in more recent years; charity and social correction, for example, amount to approximately \$788,000 of which \$300,000 is levied for the insane. These items, however, are *fixed* to a large degree, although health and charity appropriations have increased rather largely. Few of the counties make any additional appropriation for relief as we know it today.

Uncollected taxes have become one of the most bothersome problems of the counties. With budgets awry and county officials faced constantly with the unpleasant task of tax sales, the recommendations contained in the report should be welcomed by the administrators. In the last few years more and more of the local units have changed from a cash basis to one in which the close of the year finds large totals outstanding. There have always been delinquent taxes and there have always been tax sales, but the increase in both during depression times has been somewhat alarming.

Factors Of Delinquency

It is obvious, therefore, that the fundamental factors responsible need adjustment. They indicate not only the severity of the kind of tax imposed, but also the financial status of the local governments. The report lists the factors which are responsible for uncollected taxes. Some of these are: the financial distress of individual property owners, unequal assessments, lack of enforcement of collection, laxity of county officials, bad bookkeeping, the necessity for placing distressed property on a depression market, "political pull" in stringing out collections, and involved court proceedings.

There were uncollected taxes of \$14,104,000 as of 1934 and of this amount some \$8,000,000 was deficient in Baltimore City and about \$1,500,000 in the counties. The

worst part of the situation is that once taxes are in arrears, it becomes increasingly difficult to collect them without distress procedure, consequently there is an ever-increasing accumulation of back taxes which have probably been projected greatly since the report was issued. Here is an illustration: In 1929 uncollected taxes in the counties amounted to \$2,000,000; by 1930 there were \$2,155,000; by 1931, \$2,536,000, and by 1933 the figure had grown to \$4,529,000. To make matters worse for the authorities, bonding companies became tighter in giving security to county officials.

Curiously enough, it is not only the small taxpayers who are behind. A great percentage of the uncollected farm taxes is owed by a comparatively few large property holders.

To compensate for these shortages most of the counties have found it necessary to borrow money from time to time to meet current expenses, and the recommendation is made in the report that a special drive be made to collect unpaid amounts and to convert the temporary notes into sealed bonds. It is suggested that tax anticipation warrants and temporary notes should not exceed 75 percent of the total uncollected taxes in one year.

Dates, both for collection of taxes and for the charge of interest on unpaid taxes, vary greatly throughout the State—a condition that is regarded as highly unsatisfactory. There are only six counties in which the interest-bearing date for State taxes corresponds with the interest-bearing date on their own taxes. State-wide advantage would be gained, it is suggested, by the standardization of such for all counties and for the State as well.

Information for the Public

There is too little understanding on the part of taxpayers of tax matters, so it is strongly recommended that the County officials take the public into their confidence by printing the levy on the back of the tax bill; by making clear and understandable statements of resources, liabilities, receipts and expenditures, through newspapers or pamphlets. In probably very few states is so little known about the finances of local governments as in Maryland, and the continuous bombardment of local officials for information suggests the decided need of a central agency in the State to receive and disseminate information.

The matter of allowing discounts for early payment of taxes has been a moot question. Experience has shown that those counties which have been allowing discounts collect more than 60 percent of their current levy in the first month—certainly an attractive prospect! Another advantage, it seems, is that receipts are better suited to the current needs of government and, as a result, reduce temporary borrowings. But there are disadvantages, too

—all groups of taxpayers may not be able to take equal advantage of the discounts offered. Farmers, for example, depend on cash at certain times and unless those times can be met the urban taxpayer enjoys an unequal privilege. Where all tax-paying groups can take equal advantage, however, it is held that discounts will help solve the problem.

A good example of a workable set-up is in Washington County, which has a fiscal year ending May 31. All groups of taxpayers, including farmers, have shown that they are able to take care of their obligations at the same time, and no one seems to be penalized. Again, in Wicomico County, with the same fiscal year, the farmers seemed better able to meet discount provisions than did other taxpayers. Yet in Frederick County, also with practically the same fiscal year, farm taxpayers have been late.

Tax Sales

There is no more disagreeable duty for a public official than to have to sell property for taxes; moreover, few of the forced sales yield much profit to the counties. In general, it has been found that property surrendered by taxpayers is of a submarginal nature and is a drag on a depression market. The Commissioners, forced to sell, often find themselves the only bidders on the properties and consequently more county funds are tied up in property holdings. This is illustrated by the fact that in the six-year period from 1928 to 1933 there were 1,829 pieces of farm real estate sold for taxes in Maryland, and of this number the County Commissioners bought 1,267, or 69 percent. This is partially accounted for by the fact that legal complexities discourage private bidders.

A cure for this condition is offered: (1) to make the payment of taxes as attractive as possible, (2) to notify the taxpayer of the delinquency in the tenth month after the date of levy, (3) then proceed to advertise the delinquent tax list. With such businesslike procedure it is regarded as entirely proper then to sell the delinquent properties, and rapid court action is likely to result.

Bonded debt has become a serious problem in all local jurisdictions in Maryland, as it has in most of the states of the Union. The figures here tell a story. In 1912 the Maryland counties showed a total bonded debt of only \$1,922,000; in 1922 it was \$7,201,000, and by 1932 it had jumped to \$31,437,000. Of the latter total, 50 percent was in school bonds, 37 percent in road and bridge bonds and the remainder in miscellany. Oddly enough, while legal restrictions are placed on bonded indebtedness for Baltimore City and for incorporated places, there is no constitutional or statutory limitation for the counties. From 1920 to 1933 about 58 percent of all the county bonds authorized were not subject to ref-

erendum vote, and of those bonds submitted to vote more than half were rejected.

From this fact the report deduces that there are clearly certain situations where the composite will of the people might properly be heeded, particularly where policies are involved, such as in general bond proposals, in general refunding, construction of county buildings and roads. The occasions when a popular vote does not seem to be needed are those where the majority of the legal voters are not property-owners. In such cases, an authorized bond issue might fall as a direct obligation upon an unwilling group.

State Control of Debt

While it is admitted that there is danger in too stringent limitation of county bonds, the report strongly advises some sort of control over such obligations, such as a debt control board under State and local representation, or some such arrangement, as an extension of the authority of the State Tax Commission. By this means improper and unwise use of public credit might be forestalled in the future.

To show how the bonded indebtedness of the local units might be reduced if proper control measures are instituted, the report projects interest and exemption on the present bonded indebtedness many years into the future.

An important consideration in the recommendations is that under no circumstances should bond issues be of a longer term of years than the life of the improvement or property acquired by the proceeds. A limitation is imposed on the State government by law, but not upon the counties.

While the report of Mr. Walker is not intended to be definitive in its suggestions or recommendations, it is felt that counties might well proceed along the lines that are set forth.

Uniform Accounting

A definite movement toward attaining some of these ends has been made by the Subcommittee on Uniform Accounting. This group is attempting to draft a uniform accounting system for county and municipal governments and at the same time arrive at some workable means of obtaining a uniform fiscal year for all. The Subcommittee also is looking into the possibility of limiting terms of all public works bond issues to the life of the purchase or improvement, as compared to the arbitrary State limitation of fifteen years.

The Subcommittee has expert help in its work on governmental accounting through the cooperation of the Maryland Certified Public Accountants' Association, which has ordered its Committee on Governmental Accounting to give full technical advice in its work.

B. MOTOR VEHICLE PROPERTY TAX

COLLECTING motor vehicle property taxes in the counties of Maryland is no easy task. Indeed, under the present system, it is inefficient and costly, working hardships not alone on the county officials, but on certain State departments and on the taxpayer as well. In many cases the cost of collection is greater than the tax collected.

The counties themselves have been acutely aware of the fallability of their methods, and it was at the request of several of them that the State Planning Commission undertook to have William Paul Walker study the situation and develop some reasonable solution.

In February 1936, the report was made. It pointed out the manifold weaknesses of the existing system and offered several alternatives by which the counties might solve the problem.

It is believed they would be a great improvement over the present system by which motor vehicles are taxed under great difficulties caused by vehicles changing hands and owners changing addresses, by the necessity of making tax payment the price of license tags; by cumbersome movement of registration data, varying schedules of depreciation, expensive collection and inefficient records, and by cars that "disappear" into other states, counties or into junk piles.

One proposal is that the county continue administration of the tax, but that a uniform fiscal year be adopted to run between the dates of license distribution; that penny postal cards be used for tax notices, that the Commissioner of Motor Vehicles issue immediate bulletins on cars sold or junked, that permanent assessment records be kept, that license applications be sent in lots to the county for perforation, that license tags be issued at the county seats at the same time property taxes are paid or that receipted tax bills be recognized as permission for license tags, that administration be dovetailed with that of other property taxes, and that consideration be given to raising the minimum assessment on motor vehicles to \$200.

A second proposal is that such taxes be administered by a designated State department, applying the local and State tax rates and inclosing a property tax bill with the application blank for registration. The collections then would be distributed to the counties.

Alternative Proposals

Alternate proposals are that:

The property tax on motor vehicles be abolished, unless the minimum assessment be raised to a point where administration would be worth while.

The motor vehicle property tax be included in the tax bill on real estate and other personal property. In this case failure to pay county taxes would cause notification to the Commissioner of Motor Vehicles to suspend the license.

The motor vehicle owner be required to pay a graduated inspection fee before being able to obtain license plates, receipts to be distributed to the counties.

The property tax on motor vehicles be replaced by a share of the tax on gasoline or a share in the motor vehicle license fee, to be distributed to the counties.

The need for a change in system is readily apparent in the more detailed discussion of the situation as it exists. Not only is there considerable delinquency, and a great deal of expense, in the collection of small amounts (particularly where minimum assessments are concerned), but the taxpayer is put to unnecessary trouble and expense as well because of manifold transactions.

For example, the county treasurer mails a tax bill to an automobile owner. The owner either mails his remittance or goes to the county seat to pay. The treasurer must supply a receipt. Then, when the Commissioner of Motor Vehicles mails a license application to the owner, he cannot immediately go and get his tags; he must either mail or take the blank to the county treasurer for perforation. In some cases, if he lives in one of certain incorporated towns, he must have the blank perforated also by the town treasurer. When all this has been done, he may mail or carry his perforated application back to the Commissioner of Motor Vehicles' office and receive his tags upon payment of the license fee. Thus, as much as 15 cents in stamps and the cost of five envelopes and stationery may be involved in collecting an amount that, in a large percentage of cases, amounts to only about a dollar.

Such a clumsy procedure finds little support in reason, but might show a profit with a higher minimum assessment. However, the several alternatives should be inspected closely.

6. PUBLIC WORKS

A. MARYLAND'S HIGHWAYS

A TREMENDOUS amount of dissatisfaction with Maryland's unbalanced road system has been created in the last few years—probably stirred initially by the State Planning Commission's report issued in March 1935, entitled, "A Ten Year Highway Construction Program for Maryland." Up to that time both the official family and the public of the State had been accustomed to a stout defense of the highway system which had been one of the first of the motorized era. We were accustomed to pointing with pride at the fact that "no farm of Maryland is more than two miles from a hard-surfaced road, except in several swamp areas of the Eastern Shore and in some parts of the mountains of Allegany and Garrett counties."

When the subcommittee on highways of the State Planning Commission, made up of some of the best engineers in the State, delivered its report it was discovered that we were facing facts for the first time. Maryland's road structure *was* inverted, they said. With a secondary highway system of national prominence, Maryland still had a totally insufficient primary highway system. It was suddenly realized that the main highways of which the State had been so proud had grown old and inadequate for the tremendous flow of modern traffic. The narrow, curving, dangerous main highways had fallen far behind the primary systems of most of the other states.

The cure recommended was direct. It listed a certain number of Maryland's heavily-travelled roads for priority in new construction. The program was designed to fit the roads to the traffic they were carrying, just as an engineer would fit the size of pipes to the hydraulic load they were called upon to carry. Indeed, the hydraulic analogy is a happy one, it being as foolish to try to squeeze the main water supply through a one-inch pipe as it is to squeeze 10,000 vehicles a day over a fourteen-to-twenty-foot roadway. The report recommended the application of traffic flow formulae to the various primary roads, and the construction of new roads of widths dictated by these rules.

Some Projects Realized

Certain specific constructions recommended in the report have since been realized, including the new Phila-

delphia Road and the new Annapolis Road. But in the main, the problem still exists. Most of the 906 miles of primary highway recommended for improvement still need to be rebuilt. In addition, sixty bridges are listed in a separate appendix in the order of their importance to traffic movement.

Maryland is actually following with its high-speed automobile traffic the old roads of the horse-and-buggy days. Back at the turn of the century, when the State took a progressive stand and led all others in a forward-looking construction program, there was no thought of the great growth of motor traffic. There was no reason for engineers in that day to build straight, wide highways, so they followed, in general, the ancient wagon trails. When hard-surface construction began around 1908, the idea was to connect the various county seats with each other and with Baltimore City—a policy that was widely acclaimed. Who could guess that the little motor cars of that day would burgeon into the giants of today with mile-a-minute speeds, tremendous weights and a volume that would have passed belief? Since those roads connected the major centers of population, they naturally became the primary road system, and so they are today, in improved form. And generally speaking, they even follow the same old lines and grades.

The State Planning Commission report went far beyond bringing the system up to date. It projected with great emphasis the thesis that we should, in the future, keep abreast by long-term planning. Maryland has been sadly deficient in gathering of traffic data. True, the State Roads Commission has made studies in the past, but in general these studies have been only traffic counts. It is conceived as important that the destination and types of traffic be known; that industrial building trends be watched, and that rights of way be studied, located and arranged for far in advance.

The Commission was instrumental in inaugurating the current Highway Planning Survey, which is a joint project of the State Roads Commission and the United States Bureau of Public Roads. Much valuable data will accrue from this survey, but to carry out the principle laid down by the Planning Commission's report, it will be necessary to continue the studies in future years. Meanwhile, the Commission has deferred further studies

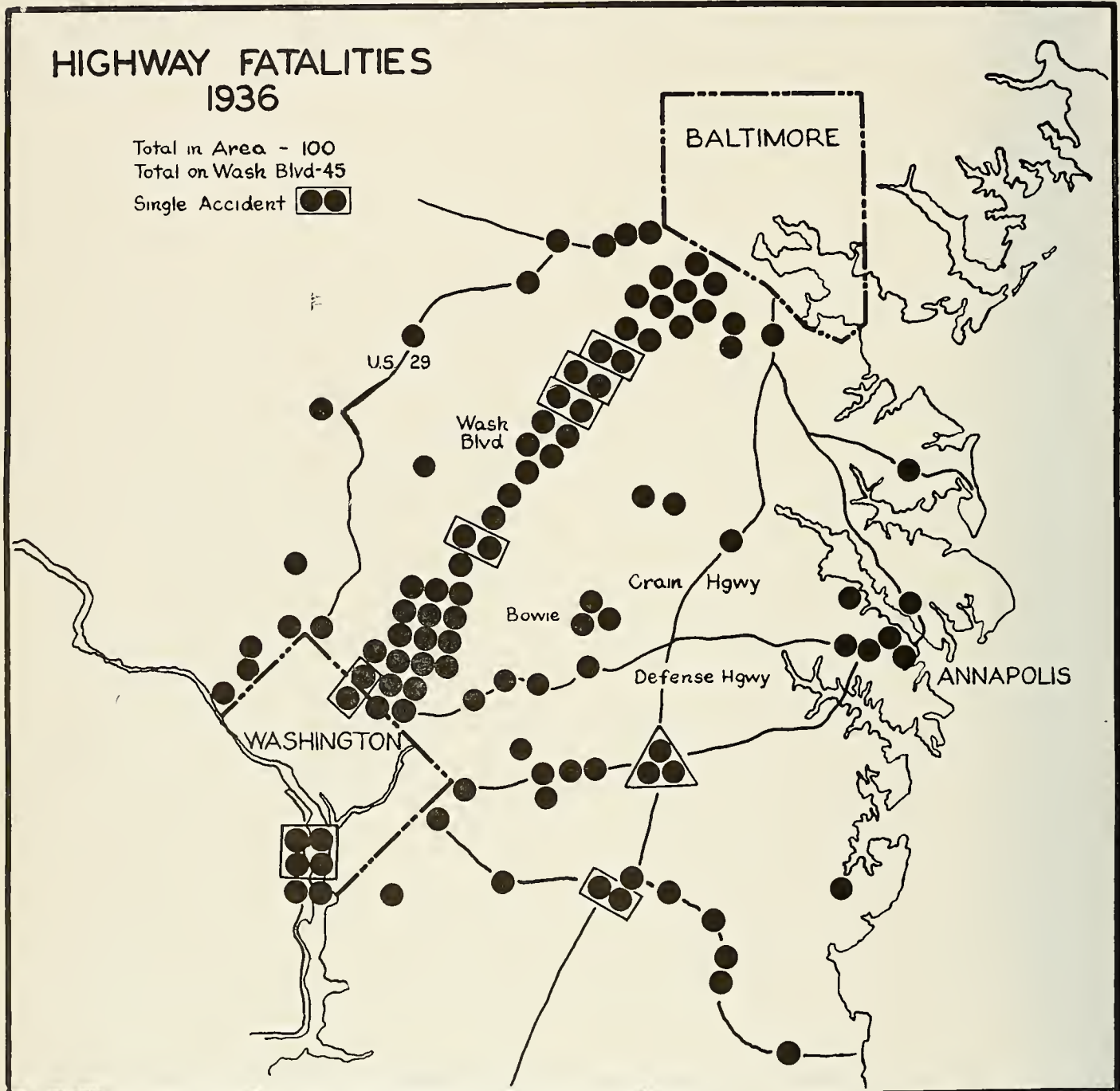
of the State highway system in favor of the comprehensive current data to be made available upon completion of the Highway Planning Survey's studies and report.

"It would be interesting to know," remarks the Planning Commission's report, "what saving of life and property, investment of funds, and in operating costs of motor vehicles would have resulted if detailed studies of future

traffic volume had been made and had culminated in the selection of an entirely new line of development."

Road widths

No definite formula for road widths was adopted by the subcommittee, but it was recommended that a determination of some sort be made. For its purposes, the studies of Dr. A. N. Johnson, former Dean of Engineering



MASS MURDER—CAUSE: EXCEPTIONAL HAZARDS.



KILLED

IN 18 YEARS



BY WARS

BY MOTORING

AMERICAN
REVOLUTION

TOTAL KILLED
253,347

1919
TO
1925

TOTAL KILLED
454,333

WAR OF 1812

1925
TO
1931

MEXICAN WAR

CIVIL WAR

1931
TO
1937

SPANISH WAR
WORLD WAR

of the University of Maryland, were taken as an example of what should be done. Dr. Johnson had developed the following widths for different volumes of traffic:

Lanes	Vehicles per hour
2	1,000
3	2,000
4	3,000

Normally, these volumes as maxima would correspond to daily flows of 10,000, 20,000 and 30,000. Nor does the Planning Commission's report pass upon the efficiency of the three-lane road—a matter of wide disagreement—beyond suggesting that, where sight distances are short and the country is rolling, the three-lane road might be too great a hazard because of the danger of head-on collisions.

Consideration also is recommended for the seasonal relationships of the various roads—relationships brought about by unusual conditions such as Maryland's horse races, the Washington cherry blossom festival, holidays, etc.

In building new highways, four mistakes must be avoided. They are:

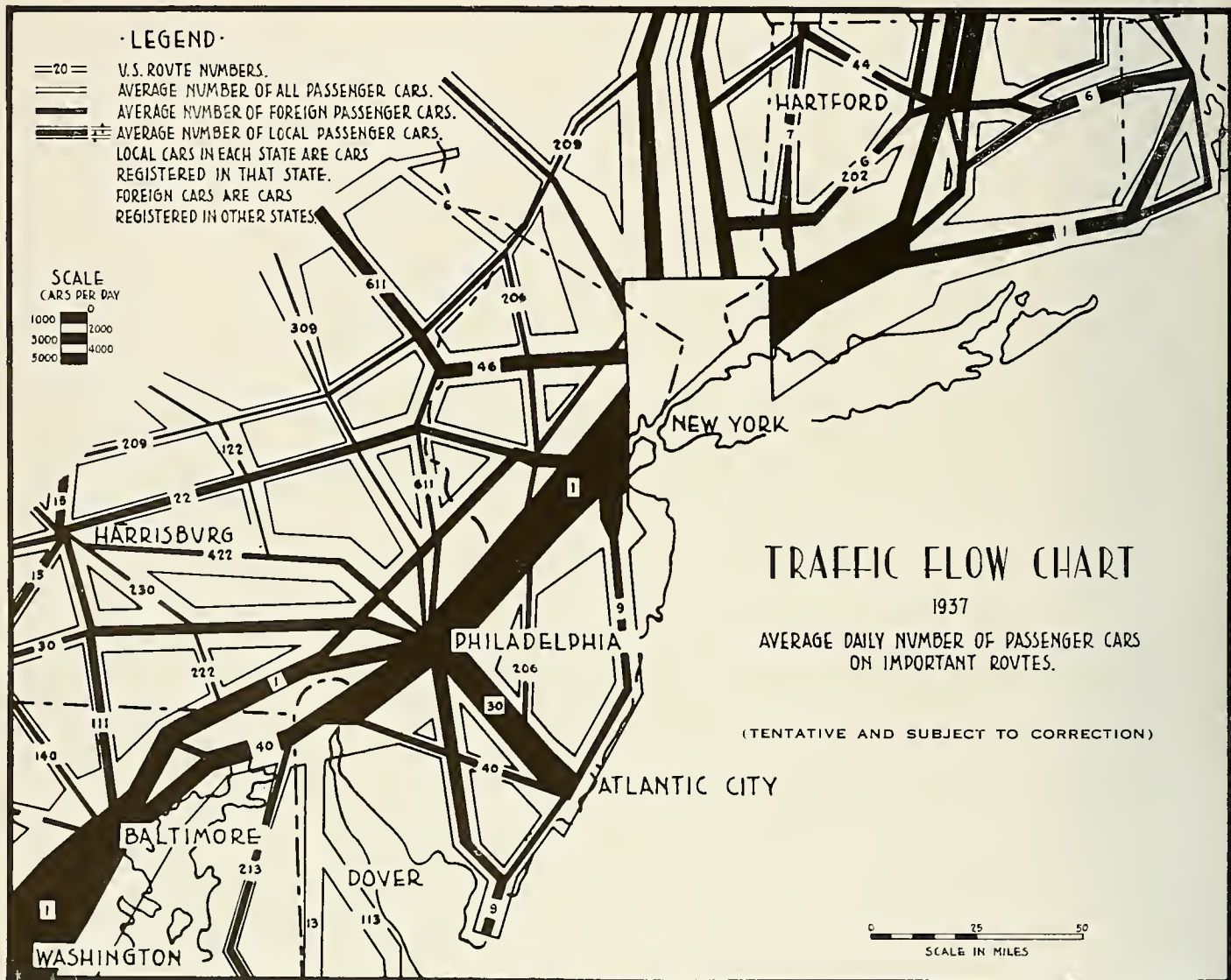
Roadway width insufficient for traffic volume, or less than 20-foot minimum sale width.

Sight distances too short for safe driving at present day speeds.

Curves badly laid out or of too short radius.

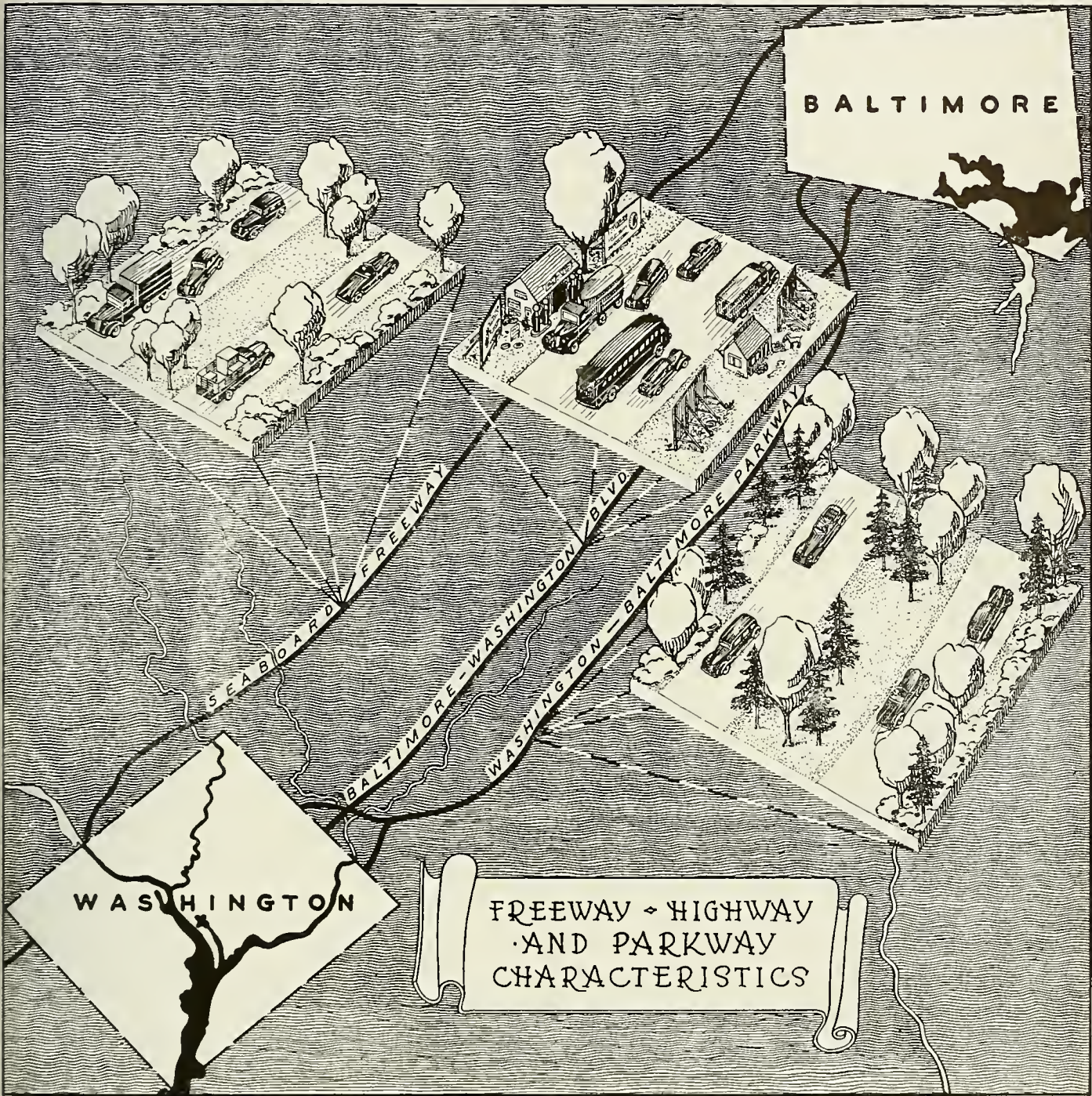
Earth shoulders too narrow for safety, due generally to inadequate right-of-way widths.

Of primary importance to the forward-looking main roads program is the matter of right-of-way. It has only



Courtesy U. S. Bureau of Public Roads

THE WORLD'S BUSIEST HIGHWAY.



FREEWAY—RESTRICTED ACCESS, UNRESTRICTED TRAFFIC. HIGHWAY—NO RESTRICTIONS. PARKWAY—RESTRICTED ACCESS, RESTRICTED TRAFFIC.

been since 1932 that the State Roads Commission has obtained its rights-of-way through fee simple deed. Before that it was customary to acquire them by easement. It is strongly urged that, in order to avoid hasty and expensive procedures, rights-of-way be determined well in advance according to a broad plan. Especially is it emphasized that sufficiently broad strips be secured. One

of the principal difficulties in improving existing roads is the development that has sprung up adjacent to the rights-of-way which require a great deal of property damage in the matter of widening. One of the requisites of a well-trained right-of-way department, as envisioned by the plan, would be a competent legal advisor in full time service under the Chief Engineer.

Westchester's Parkways

By way of presenting a model of highway development and to illustrate how a splendid parkway system can be secured under an economically sound arrangement, the subcommittee presented a brief description of the Westchester County Parkways in New York. These beautiful roads not only are designed to carry great volumes of traffic safely and comfortably, but their beauty is guarded jealously through simple expediences of law and planning.

An appendix on the report explains how Westchester County secured rights-of-way at a minimum of 400 feet in width. Beyond that a "restriction-of-use" clause is written into the deeds of abutting properties, as part of the right-of-way negotiation on condemnation, which prevents the construction of any billboard or advertising within 500 feet of the edge of the right-of-way. For practical purposes, this means that no advertising displays may be seen from the roadway. In those rare cases where advertisers have persisted, their billboards have been screened by effective tree planting.

None of the undesirable roadside development that is common in Maryland is found in Westchester County, because the parkway authorities have built their own filling stations and refreshment structures at five-mile intervals. No advertising material is allowed on these stations. The architecture is harmonious, and the buildings are set well off the traveled portion of the road, with plenty of parking space. No parking is allowed upon any of the highways except at designated parking places, reducing hazards. Since cut-throat competition is eliminated, the leases on these stations become valuable. They have amounted to as much as \$10,000 a year, and the proceeds from this source alone have given the parkway authorities sufficient for all maintenance costs of the network, with instances of return of funds to the County Treasury for application on debt service on the bonds with which the parkways were originally built.

The roads are effectively landscaped and, because of the attractiveness of the road, abutting property values have increased very greatly, whereas they are inclined to decrease along an ordinary highway with its string-town development.

Such roadside control, it is felt, could easily be employed on the highways of Maryland, and there is a strong recommendation that access to main highways be limited to public intersections at considerable distance apart. At present, anyone is able to enter a state road at any point, but under the suggested arrangement property owners would follow "access roads" which would parallel the highway to a point where a "feeder road" would lead in. It is suggested that sidewalks be provided along highways where there is a pedestrian problem in order to cut down the frightful accident toll.

North-South Highway

One of the primary aims of the ten-year program was a modern route through Maryland from north to south, or from Philadelphia to Washington. Partially realized through the new Philadelphia Road, there is yet much to be done. It is interesting to note, too, that an integral part of this plan is the primary bridge program which the State Roads Commission recently presented to the Public Works Administration. It was suggested in this plan that a modern Philadelphia Road by-pass Baltimore to the south by means of a harbor bridge, and that traffic be carried on to the proposed George Washington-Wakefield Memorial Bridge near Morgantown; but the State Planning Commission program was careful to stipulate that a new Baltimore-Washington highway pass close to Washington between these two bridges.

By-passes of Baltimore to the North also were recommended—one by way of Northern Parkway and Belvedere Avenue, an intermediate belt line by way of Arlington Avenue and Cold Spring Lane, and an inner belt line by way of Erdman Avenue and Thirty-third Street. These routes, however, were merely suggested, and it was recommended that the Baltimore City Traffic Committee determine the actual routes.

A special recommendation for immediate consideration was a new approach to the City of Baltimore on the Washington Boulevard to eliminate the existing bottleneck structure at Winans. The suggested route would be between the boulevard at St. Dennis and the Baltimore City line at Wilkens Avenue.

Other new construction urged immediately was the Baltimore-Annapolis Road, the Defense Highway between Washington and Annapolis, an Eastern Shore Highway and improvement of the National Highway from Baltimore to the Pennsylvania line.

With the Annapolis road under construction, there remain as important among the suggestions the Defense Highway, with its narrow and dangerous line and grades carrying heavy traffic now and with prospects of an increasing load, and the Eastern Shore highway, long needed to replace the present tortuous and hazardous network of roads.

The report looks ahead to the building of a Chesapeake Bay Bridge or the institution of a high-speed ferry, and beyond that to the increasing trade between the Eastern and Western Shores of Maryland—to recapture for Maryland the vast commerce that now exists between Wilmington and Philadelphia and the 'Shore. As far as possible, present roads and present bridges would be utilized for the new highway. The National Highway, one of the oldest roads in the United States, has had no material improvement for many years. It is considered urgent that the highway be modernized between Baltimore and Hancock, and that the towns along the route

be by-passed, with special emphasis on the necessity of a Hagerstown belt-line.

In all major highway construction the report urges that grade separations be built where possible, and the clover-leaf design is given especial consideration. It

warns, too, against creating hazards through improper planning of railroad grade crossing eliminations. It is pointed out that some of the elimination projects have been almost as dangerous as the crossings they were designed to eliminate.

B. PUBLIC WORKS PROGRAMMING

RECOGNIZING the importance of an integrated plan of public works for Maryland, the State Planning Commission has laid the foundation for a proper distribution of State funds in future years. In order to show these needs more clearly, two reports have been made—one showing in detail the expenditures in public works for the ten years between 1924 and 1934 and the other containing preliminary estimates of the probable expenditures by the State for the period of 1934-1943. The latter report, it should be explained, covers only State public works, other than roads, because future programs for the latter and for the needs of other levels of government had not been made. This deficiency emphasizes the lack of forethought in our public works enterprises and suggests the need for long-term planning both for the enlightenment of the public and for the benefits that will naturally accrue in the projects themselves from full consideration. Both of these reports were compiled by Mr. Thomas F. Hubbard, Associate Consultant, National Resources Committee.

No better illustration of the haphazard development of the past could be found than in the imbroglio that attended Federal emergency public works project planning. Everyone is familiar with the fact that few communities had developed intelligent or adequate programs for future needs and in some cases heavy penalties were suffered by states which had failed to look into the future. The important considerations that arose before the State Planning Commission, in attempting an estimate, were:

How much can a community afford or be expected to spend during a long-term period?

What has been the attitude of the various communities toward the development of their possibilities?

What are the attendant costs other than the cost of construction?

What are the principal fields in which public construction can be planned?

What is the desirable ratio for the distribution of expenditure among the various classifications?

It was in order to throw light on these questions that the study of past expenditures was undertaken. The record is a valuable one and is of much interest as an accounting of past expenditures. As remarked in the

introduction, the 1924-1933 report tells us "where we have been, and may motivate the citizens of Maryland to interest themselves in where we are going with the tax dollar."

The suggested future program, which projected expenditures for the period of 1934 to 1943, has lost some of its significance, of course, by the elapsed time, since it was issued in 1935; but with proper compensation for what has been done in public works, it should still be a guide in the formation of a reasonable plan at any time that the State may care to reduce its public works to a definite program.

It is contemplated that these reports will be revised from time to time as facilities permit.

Scope of Report

In all cases, a careful canvass was made of the public services and institutions to perceive their needs. The matter of schools was taken up first. These included the University of Maryland. These and water and sewer projects, public buildings (including psychopathic, tuberculosis and military institutions) and State parks (including forest land) encompassed the scope of the report.

In each case, the institution head or public official in authority aided the Commission's consultant's in setting forth not only the future needs, but also the current status. A detailed statement was made by the Commissioner of Mental Hygiene and another by the General Superintendent of Tubercular Sanatoria in view of the pressing needs in both of these lines of effort. Dr. George H. Preston, the Commissioner of Mental Hygiene, has used as his guide the "Minimum Requirements of State Hospitals," prepared by the American Psychiatric Association, as his objective, and set forth the conditions in which the Maryland institutions conform, and he recited all of those other requirements in which the State was deficient.

Dr. Victor F. Cullen, in charge of the Tubercular Sanatoria of the State, marks the great progress that has been made in controlling and reducing the "white plague" by 60 percent since 1901. He cites as his chief needs additional facilities for children and Negroes, the full cooperation of county health units in tuberculosis prevention and care, more State supported clinics and increased public information.

C. AN APPRAISAL OF EMERGENCY PUBLIC WORKS

THERE IS scarcely a community in the State of Maryland which has not been benefited by the Federal Works Program in some degree or other. From Baltimore City with roughly half the population of Maryland through the twenty-three counties of the State and the State itself, to the small villages in the remote sections, the Government has extended its aid in solving unemployment problems.

Even more important than the works realized throughout the State is the social benefit that has prevented what might have been an ugly situation.

So widespread has been the program under the Federal Emergency Relief Administration, the Civil Works Administration, the Public Works Administration and other Federal organizations that it has been difficult for a casual observer to obtain any perspective of the results achieved. It was in the realization that such a view should be obtained that the State Planning Commission participated in the nation-wide "United States Community Improvement Appraisal," which was finished in March 1938. In a voluminous document on Maryland one can find listed and explained all of the many projects that have employed thousands of workers in many fields of endeavor in the last four or five years.

In each case local officials directly concerned have made reports along lines set forth in the investigation. In many cases photographs have been supplied and incorporated in the report, many of them showing startling results before and after the public works projects.

Range of Benefits

It was not enough that the reports be made on the basis of visible results and figures alone. It was important to find out how well the projects covered the field of needy employables; how well they fitted the experience and training of the unemployed; to what degree the community shared in the costs; the social values of the various works (including education, health, professional, youth, recreational and arts projects); quality of workmanship, improvement in civic standards, and the opinion of local beneficiaries of the relative value of work relief and direct relief methods.

That the projects measure up to high standards, in most cases, leads to the conclusion that Maryland has profited far beyond calculation from the Government aid. But the subcommittee which reviewed the local reports did not fail to discover several weaknesses which might easily be corrected, and it recommended, first, that a more careful classification of employables be made, segregating those who are not as physically or mentally fit or as well trained from those who are qualified workers; second, that every community should give

thought to a permanent plan of improvement for the future and that such a plan should be filed with a State office and, third, that the successful execution of the projects is more dependent on proper supervision than on any other factor.

It is interesting to note that the majority of reporting officials gave hearty support to work relief as opposed to direct relief, and it is gratifying that a number approved in general terms the definite planning of all local projects in the future.

Even to list the numerous projects reported on in Maryland would involve an excess of space and, since it is the purpose of this summary simply to call attention to the appraisal report, which is available for inspection, no more than a categorical comment on the projects will be undertaken. However, the State works are worthy of some special note. For example, the considerable operations at the University of Maryland at College Park under the PWA have greatly increased the efficiency of that institution. Such major projects as a dormitory, a new Arts and Sciences Building and extensive alterations to the dairy building have been of great value.

At Baltimore, PWA funds played an important part in the equipment and alterations to the University Hospital and Dispensary. These university projects alone represent in State funds something over three quarters of a million dollars. In addition, the University profited through the construction of new animal and dairy industry buildings, the clearing of farm lands belonging to the University, the valuable aid extended by the National Youth Administration in supplying needy students with part-time clerical, technical, statistical and special employment, and the institution of a recreational project.

Variety of Projects

Then there has been extensive work in forestry, roadside improvement, drainage, horticulture, mosquito control and Japanese beetle control under the program of the Civilian Conservation Corps.

The Maryland Mapping Agency, which is dealt with in another section of this summary owes much of the progress it has already made to Federal relief aid. Finally, there is the Nursery School, a project which, though small, has rendered valuable aid both to mothers forced to work and to their offspring who otherwise would have obtained little attention.

It is worthy of comment here that the State Forester appraises the work done by the CCC in terms of a twenty-five year advance in forestry beyond what the State might otherwise have expected. At the same time, the CCC is credited with having placed in production various acres of Eastern Shore farmlands which otherwise would

still have been partly inundated.

Another beneficiary has been the Department of Health with the many water supply and sewerage systems, its sealing of abandoned mines to reduce stream pollution, its community sanitation program which dissipated many threats to public health in various parts of the State, and its death certificate cross index work.

Hidden from the public view, but of immense social importance in the State has been the recreational program instituted with Federal funds in the State penal institutions. Coming as it did at a time when idleness was forced on a large majority of our State prisoners, it was a Godsend in heading off the evils of idleness among confined people. Harold E. Donnell, Superintendent of State Prisons, is most emphatic in his appreciation of the work accomplished.

County Works Advanced

From the various counties have come eager reports of officials of much-needed public works completed—works that might not have been realized under strictly county financing for many years to come, and there is no lack of appreciation of the additional values in employment of people who otherwise might have been on the dole.

These projects have taken many forms. Public schools have been perhaps the largest sharers in emergency works projects, followed by road and street construction, bridges and improvement to public buildings, water and sewerage systems, parks, playgrounds ground improvement and stream clearance.

Special projects have followed closely the needs of the different sections of the State. For example, in the Bay-front counties there have been many improvements to navigation, to the fishing industries and in mosquito control, while in the extreme western part of the State, roads and forestry have been the chief needs fulfilled.

Many of even the small projects are not lacking in human interest. For example, the cafeteria built with PWA funds in the Centreville Elementary School and operated by WPA workers, so that some 5,000 lunches a year are served to undernourished children and 1,200 to other children. This is but representative of a great many of such projects.

Baltimore City Operations

Baltimore City's share in the emergency progress has been tremendous, and covers a very large section of the report. In PWA and WPA since 1935 alone, some \$33,900,000 in city, State and Federal funds has been expended on a wide variety of endeavors. It is a prodigious list, covering all sorts of things from such major street improvements as the Howard Street extension and the Twenty-ninth Street bridge to the resurfacing of numerous other thoroughfares, and on to the art and library projects at the Museum and the Pratt Library

which contribute greatly to Baltimore culture and to reference works for the future.

In between, are major improvements in sewers, water supply, harbors, public buildings, parks, schools, playgrounds and recreation. A tremendous range of jobs is represented in the city-wide program, from highly skilled research to common labor on highway and ditch projects.

Other cities and towns of the State also make full reports of their progress covering a wide scope of operations. In nearly all cases it is admitted that without emergency funds these improvements and developments could not have been undertaken.

Shortcomings

Generally, as a compendium of data regarding emergency public works projects the report has unquestioned value; as a thorough appraisal it has its deficiencies. Because it is chiefly a self-appraisal, it lacks singular objective and comparable quantitative criteria and as an obvious consequence there are many appeals for more money, removal of limitations, and reductions in sponsor's contributions which apparently have not received mature thought.

Certainly there is a display of interest in local planning in the appraisal but there is little evidence of real adjustment of the work program to any definite future plan or to maximum local needs. Little attention has been given to the effect of local bond issues for relief financing on local financial structures but this cannot continue to be ignored in the future. There is no comparison of the volume of work relief with prior normal public works, so that the growing question of the extent to which normal public work is being loaded on the relief program remains unanswered.

Then there are the questions of the effect of competition of work relief with private contracting; the comparative costs of WPA, PWA, and normal contract jobs; the effect of the transition towards Federal financing of local improvements; and extent of future maintenance and operating costs required. So it seems that the report points primarily to the need of a more comprehensive disinterested appraisal with common objectives of evaluation of the many elements thereof.

The report on highways referred to, entitled "Ten-Year Highway Construction Program for Maryland," was prepared by a Subcommittee on Highways, composed of H. D. Williar, Jr., *Chairman*, W. T. Ballard, C. B. Bryant, B. L. Crozier, Frank K. Duncan, N. L. Smith, S. S. Steinberg, and J. T. Thompson.

The report on the appraisal of emergency public works referred to, entitled "United States Community Improvement Appraisal—State of Maryland," comprises individual reports by local officials and a review by a subcommittee comprised of E. B. Passano, *Chairman*, Thomas H. Chambers, Mrs. Charles E. Ellicott, James H. Gambrill, Jr., Harry Greenstein, Marion DeK. Smith, and Harvey Weiss. (Copies not available for general distribution.)

7. THE MARYLAND MAPPING AGENCY

THE MARYLAND Mapping Agency is a forward step in an ancient art. If map-making is not our oldest form of record, at least it is one of the oldest. Since paleolithic man discovered that he could scratch the crude likeness of a tall tree on smooth stone, humanity has drawn lines between landmarks to set down permanently what the mind might otherwise lose or distort, and to guide others on their way.

Map-making has progressed. We have complicated mathematical procedure to reduce our records to an astonishing degree of exactness. We have delicate instruments to confine our lines to a hair's breadth. We have learned to record in three dimensions, instead of two. We have learned to use colors for categorical treatment. And we have even standardized map-making methods to a certain degree.

But it is in this latter point that the science has left its most conspicuous point of vulnerability. Though methods have been standardized, there has been little agreement in maps themselves—even when they are in close relationship. There are hundreds of maps in Maryland alone that are difficult to reconcile to each other, although they may be technically correct from the points at which they were started. The difficulty lies in the fact that they all were started with different basic conceptions.

It was in a pioneer effort to reconcile these differences and to start map-makers (in Maryland, at least) on a common future course that the Maryland Mapping Agency was founded on February 13, 1936, under the sponsorship of the State Planning Commission and the University of Maryland as a Works Progress Administration project with Prof. S. S. Steinberg, now dean of the College of Engineering, as Director. The idea was new, but, curiously enough, the power of reconciliation, co-ordination and centralization of maps and map-makers has been within our grasp for a long time. It is not strange, therefore, that the attention of engineers and public officials from far and near has been attracted to the simplicity and useful purpose of the Agency.

Central Repository

As one of its primary functions, the Maryland Mapping Agency has set up a central repository for all of the many maps, old and new, made in the State by both public and private interests. Of growing importance to engineers and map-makers will be the indexes and files of this agency. The fact that there has been no such

index and repository probably accounts for the many expensive duplications and overlappings. Eventually, it is hoped, the Agency will be in a position to have copies of each map available for sale or distribution. As it stands, it is able to point to the sources of the maps it now has on file—a service that has not been available before.

Map-making has always been a localized effort. If today we laugh at some ancient deeds that describe a piece of property as, for example, "starting at the big oak where Bill Jones killed the Indian," we must remember that a map so drawn was sufficient unto its day. Community scope was small, and everyone knew Bill Jones and his memorable deed.

We may not laugh as heartily today over the fact that most surveys of Baltimore start with the Washington Monument, while those of Washington Metropolitan District start with the Capitol dome and others in Anne Arundel County with an arbitrary intersection of two imaginary lines, but the principle is the same. Today these old limits of scope are proving troublesome to engineers. The development of fast transportation has brought decentralization of urban areas and an overlapping of urban influences. Lines from Baltimore's arbitrary starting point are intruding on those from Washington, and *vice-versa*. And so it is all over the country. No more in agreement are points of elevation—there is a wide disagreement in datum of mean low tide, for example.

Therefore we may recognize as of extreme importance in this advanced engineering age the pioneer effort of the Maryland Mapping Agency to encourage engineers to tie their surveys to the horizontal and vertical network of the U. S. Coast and Geodetic Survey, thus making these lines not only practically indestructible, but agreeable to all other lines so tied in. Many engineering inconveniences and discrepancies may be laid to the destructibility of survey markers. The Agency plans to protect important monuments by appropriate legislation, and it plans, too, to project legislation that will allow surveyors to go on private property for the purpose of using geodetic survey or State survey stations. It is planned also to collect and preserve all worthwhile survey data, thereby salvaging for future use much valuable information now being lost, and to transcribe this information to a master map.

Astonishing as it may be, there are 60 or more uncoordinated map-making bodies, public and private, in Maryland alone. There are 22 State departments and 17 Federal agencies, all of the political subdivisions, sanitary districts, local planning boards, and a host of private interests that make every conceivable kind of map. There are land maps, road maps, tax maps, geological, educational, weather, forestry, military, health, public works, police, conservation, water, soil and agricultural, coast and geodetic, park, sewerage, telephone, telegraph, railroad and a host of other specialized maps.

It is an aim of the Maryland Mapping Agency to coordinate the efforts of these many agencies to avoid duplication and overlapping and to develop uniformity in surveying and mapping. As a central meeting point once a year for all of these groups, the Agency would perform an important mission in a comparison of plans and notes for the year's mapping, thus saving unnecessary effort.

One of the reasons that more engineers have not tied in their surveys with the U. S. Coast and Geodetic Survey has been the sparsity of monuments through the State. To do so would have meant, in many cases, running out their lines many miles. But shortly before the founding of the Maryland Mapping Agency, the Civil Works Administration made possible a project for extending the local control surveys in Maryland, an effort that has proven of great value. The Agency hopes to promote continuance of these surveys so that it will be more reasonable to demand a fundamental uniformity.

The principal problem at the moment is to obtain proper support for the Maryland Mapping Agency. To date it has had to depend upon the interested help of the Planning Commission, the Federal Government, and the University of Maryland. For perpetuation and real-

ization of its aims, however, it must look to the State for ultimate support. The fact that such widespread attention has been attracted to the Maryland effort, as well as quick reactions to its purposes, leads to the belief that the system may spread to other states. Maryland has an opportunity to continue leadership on the path that leads from engineering confusion to order and economy, both public and private.

Prior to December 31, 1936, the Agency's staff was considerable, but an order effective on that date removed all men "not on direct relief." For three months in 1937 the National Resources Committee provided the services of another technician. But, at the time of the second report (October 1937), the staff consisted only of C. B. Kegarice, engineer in charge, and two draftsmen.

Despite handicaps in staff, however, the Agency has made an important start. At the time of its second report, it had collected 767 maps and 96 pamphlets. Of these it had mounted 355 of the maps for careful preservation, 264 had not been mounted, 84 prints had been assembled printed on linen, and 64 tracings had been made where prints were not available. The Agency had run 22.8 miles of local control surveys in extension of the CWA surveys in the State. Considerable progress in indexing and filing had been realized.

In its second report, the Maryland Mapping Agency not only lists its aims and progress in considerable detail, including a list of all maps and pamphlets on hand, but it explains simply its aims in attaining a system of single plane coordinates.

The reports referred to, entitled "First Report of Maryland Mapping Agency" and "Second Report of Maryland Mapping Agency," were prepared under the direction of a subcommittee composed of S. S. Steinberg, *Chairman*, Francis H. Dryden, Thomas F. Hubbard, Edward B. Mathews, Carroll F. Merriam, Henry W. Schaidt, Joseph W. Shirley, and Nathan L. Smith.

8. MARYLAND'S DRAINAGE BASINS

MARYLAND lies in two great drainage basins focusing on the upper Chesapeake Bay and the Potomac River. Water movements through both of these irregular areas constitute a vital factor in most categories of human well-being. Water supply, waste disposal, agriculture, industry, navigation, fishing, traffic and manufacture—all of the conditions that make up a modern civilization are dependent upon these movements.

Recognizing the vital nature of these factors, the State Planning Commission in 1936 undertook exhaustive studies of both basins with important recommendations for improvements. Not only do these reports deal with water flows, but they cover an immense cross-section of endeavors affected by them. Indeed, to read these reports is to obtain an excellent cross section of general conditions throughout the State.

Problems within the two areas are similar in some respects, but totally different in others. Both suffer from lack of water supply systems for communities; both suffer from water pollution; both need to have their navigational facilities improved to some degree. But where land drainage is a considerable problem in the upper Chesapeake Bay area, flood control and water power development are the outstanding problems of the Potomac River basin.

Specific recommendations have been made for correction of faults in both cases. In the upper Chesapeake basin the recommendations cover:

- Improvement of the harbors of Baltimore and Annapolis (The recommended Chesapeake and Delaware Canal project is nearing completion).

- Development of water supplies for the smaller communities within the area with concomitant installation of sewerage systems.

- The abatement of stream pollution resulting from raw sewage and trade waste outlets.

- Development of additional recreational facilities and wild life protection.

The recommendations for the Potomac River basin are four:

- Development of water supplies for smaller communities.

- Flood control to protect Cumberland, Washington, and smaller intermediate towns on the Potomac from sudden inundation.

- Development of power projects.

- Establishment of recreational areas.

The areas that lie within the Chesapeake Bay drainage basin are fortunate, indeed, compared with many other sections of the country. Its year-round good climate—one of the best—its geographic position with relation to storm paths, its adequate rainfall and snowfall and their distribution, the high percentage of sunshine (partial on 322 days a year in Baltimore), and its excellent topography make for extremely satisfactory conditions.

Navigation is highly developed; industries of all kinds have all their natural needs supplied; agriculture finds no complaint of scarcity or overabundance of water; irrigation is unknown and unneeded and drainage for the most part is good.

Underground Waters

Underground waters within both areas have been charted and found adequate. These supplies are used only by smaller communities, although they are kept in mind for prospective further use.

While the two reports do not deal exhaustively with all phases of activity affected by the drainage studies, a general outline of the effect of water movements within the area is made available. The geography of the entire section is examined at some length; the effect of human occupancy and the distribution of populations is studied (It is notable that 1,260,000 people live within the Chesapeake basin alone). Future trends in population—growths in the case of cities and decreases in the case of rural sections—are projected.

Agriculture is examined in all of its ramifications. Crops are analyzed in their relative positions; mining, lumbering and other activities come under inspection. Navigation and fishing conditions within the areas are recited, and their deficiencies detailed. In transportation, a thorough treatment is made of waterways, highways, railroads, airways, and facilities for each. The nature, course, topography, discharge and other facts on the tributarial streams of each area are studied.

With all of this multitude of facts available, it is easy to follow the recommendations and the plans brought forth in the studies.

In the navigational projects in both basins the Army plans are followed, although it is admitted that in the Chesapeake area this is not the outstanding problem. More important, apparently, are the navigational needs



Courtesy National Resources Committee

in the Potomac, and definite recommendations are made for improving the Washington Harbor and the Potomac River waterfront at Washington.

Needs and Expedients

The most pressing need of all along the Potomac is that of flood control. Rushing waters on this river are sudden and violent, and they occur at practically all seasons of the year. The chief damage has been in the heart of Cumberland and along the river front and air-ports of Washington, and at Bladensburg, Md. Two effective expedients are suggested:

1. At Cumberland, where the Potomac and Wills Creek meet practically in the center of the city with a great congestion of water in flood times, it is proposed to alter the channel of the Potomac, cutting across the neck of land near Ridgeley, West Virginia, to transfer the problem further downstream. Local protection on Wills Creek is also recommended.

2. For Washington, channel improvements alone allay the problems; and Bladensburg could be protected also by channel improvement, in the construction of levees and retaining walls, by improvement of the highway bridge, and by raising the highway, which is always inundated in flood time. To build comprehensive flood-control works, such as retention dams upstream, would be prohibitive in cost.

While neither study outlines specific water supply projects for smaller communities, they emphasize the fact that these works should be speeded. Since proper sewerage facilities depend to a large degree on water supply, the recommendation of improved sanitary systems is made at the same time.

Interrelated with both to a large extent is the matter of stream pollution, since large numbers of communities make a practice of emptying sewage into the streams of both areas. While some of this sewage is treated, all too much is not, and for immediate consideration is the plea that treatment be extended. The other factors of stream pollution are industrial wastes, silting, and erosion. Control of the trade wastes is suggested for quick consideration, and the proposals for abating natural pollutions from silting and erosion should follow the problems worked out by the special Advisory Committee on Water Pollution of the National Resources Committee.

A special project is a dam on the Savage River in Garrett County to regulate the capricious flow of the north branch of the Potomac below Luke. By holding back spring floods and using the water thus impounded to augment the flow in dry seasons, industries will be better served, sewage discharges will be diluted, and floods on the stream will be better controlled.

As for water power, the Planning Commission report suggests a review of the findings of the Army engineers made in 1930 and a reconsideration of their recommenda-

tions. These engineers reported that there were eight locations in Maryland that could be developed as economic sources of hydro-electric power, and should be developed at some future time.

The drainage problems in the upper Chesapeake basin concern swamp lands on the Eastern Shore and mosquito and Malaria control in the areas of the Western Shore. The principal areas studied on the Eastern Shore are Long Ditch Swamp in Queen Anne's and Caroline Counties and the Pocomoke Swamp in Wicomico and Worcester Counties. Some work has been done in each of these areas by the CCC and the WPA.

The only two points on the Western Shore where drainage problems are pressing are at Chesapeake Beach in Calvert County and at Point Lookout in St. Mary's County.

In the Potomac basin there are only two areas affected by the encroachment of swamps—both near the mouth of the Potomac—one in St. Mary's County and one in Charles County. In the case of the former, it is held that most of the present farms should be retired and recreational areas established. In the latter (the Zekiah Swamp area), excellent farm lands would be gained and existing farms would be protected by proper drainage.

Recreational Facilities

The recreational facilities in the Potomac River drainage basin are more varied than those in the upper Chesapeake Bay area. Garrett County is regarded as a section of vast possibilities for camping, hunting, fishing, hiking and nature study.

Two areas in this western portion of the State recommended by the State Planning Commission for acquisition—one in Garrett County and one in Washington and Frederick Counties have subsequently been acquired by the Resettlement Administration. Not only will these purchases retire sub-marginal farmland, but they will create desirable recreational areas as well.

Other areas which have been recommended for recreational development are the Dan's Mountain in Allegany County south of Cumberland, the district at the southern tip of St. Mary's County including Point Lookout and the Monocacy Battlefield.

For the upper Chesapeake Basin the chief recommendations are for waterfront properties for recreational purposes. As in other reports, the State Planning Commission places great emphasis on the importance of developing the Bay waterfront for a vast number of people.

The two reports referred to, entitled "Comprehensive Report on the Upper Chesapeake Bay Drainage Basin" and "Comprehensive Report on the Potomac River Drainage Basin in Maryland," were prepared through the cooperation of H. T. Critchlow, Wm. M. Piatt, Ferdinand Hamburger, and George D. Johnson; and a subcommittee composed of Ezra B. Whitman, *Chairman*, F. W. Besley, B. L. Crozier, E. J. Dent, F. H. Dryden, J. B. Ferguson, George L. Hall, Harry R. Hall, F. Hamburger, T. F. Hubbard, G. D. Johnson, and E. B. Mathews. (Copies not available for general distribution.)

9. FOR BETTER HEALTH

TO IMPROVE the public health in Maryland is to build further safeguards against mankind's most ferocious enemy—disease. It is toward this end that the State Planning Commission has issued an important report based on a two-year study of health administration in the State and embodying broad suggestions for bringing a greater degree of integration and cooperation to efforts within the State and county organizations.

Recognizing that there can be no armistice with our microscopic foes, but rather that we must ever strengthen our defenses and our militant forces, the State Planning Commission requested the International Health Division of the Rockefeller Foundation to lend assistance in an appraisal of our present facilities and a program of improvement. The foundation assigned Dr. John F. Kendrick and Dr. W. A. McIntosh to the task, and their reports were made to a subcommittee of the Commission.

Maryland has been fortunate in an enlightened leadership that has stood as a bulwark between its people and the plagues and pestilences that have written some of the most doleful pages of history. We have the sixth oldest public health organization in the United States.

But even our fine State Department of Health desires strengthened relationship with the various county health organizations. It is toward the realignment of the many functions of the Department to obtain a more orderly procedure, and toward the building up of a cohesive program of effort in the counties, with State direction, that the report points.

Two Cardinal Principles

At the start it is realized that two cardinal principles must stand forth—stabilization of employment of trained and efficient personnel through permanence of position, and a program devoted to attainable, measurable objectives. It is emphasized that the proposed changes are not to be made suddenly, but gradually and according to well-laid plans calculated to bring, first, a more efficient organization and, second, a more economical primary function that may supply some of the funds badly needed for extension of the work. Certain bureaus and divisions would be consolidated; several others would be created, and some of the present activities shifted in the interests of efficiency. An Operating Manual, covering all phases of health work, would be prepared as a permanent guide, each department contributing its part.

But it was in trying to work out a program to improve health administration in the counties, under close co-operation with the State, that the investigators ran into trouble. It is difficult, they found, to elevate one county service vertically under present loosely-knit governmental procedure; much easier and more desirable to lift all services horizontally through a coordinated administration. Part 2 of the report advances suggestions for a new arrangement of county government, with a "coordinator," under the County Commissioners, to integrate all services, and it proposes a five-year demonstration in some selected county.

The Maryland State Board of Health was organized in 1874. In 1910 the State Department of Health was created under the board for the operation of certain authorized bureaus. Today the Board has a membership of nine—the Attorney General and the Commissioner of Health of Baltimore, ex officio; four physicians, one of whom is the Director of Health; a civil engineer, a pharmacist and a dentist. In the counties, the County Commissioners now act as a board of health, and the county health officer, who serves also as State health officer, acts as executive officer and secretary.

Public Health Council

The question is raised now whether it would not be better for the State Board of Health to be supplanted by a wieldy State Public Health Council of four men, whose typical member might be a public-spirited citizen with a real knowledge of and interest in public affairs. The same question is raised for the counties, a County Public Health Council taking over the function of the commissioners in public health matters. It is felt that adequate medical direction is already available in the State Department of Health, both for the State organization and, through it, for the counties. A stronger lay voice and sympathy is seen as a distinct need.

The Director of Health in Maryland is a busy man. In addition to supervising all of the activities of the Department, he is Registrar of Vital Statistics and must, according to law, wield his personal pen over every certificate of birth, death, marriage etc. In addition, he is the active head of the Bureau of Communicable Diseases. Onerous duties, indeed, for one whose chief function should be to coordinate the scattered activities and initiate new work.

STATE DEPARTMENT OF HEALTH OF MARYLAND

SECRETARIES AND STATE HEALTH OFFICERS
MARYLAND STATE BOARD OF HEALTH

PRESIDENTS OF THE MARYLAND STATE BOARD OF HEALTH

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DR E. LLOYD HOWARD 1876-1881
DR JAS. ROBERT WARD 1881-1884
DR RICHARD M. SHERRY 1884-1885
DR JACKSON DODGE 1886-1893
DR JOHN MORRIS 1893-1895
DR J. M. BATEMAN 1895-1897
DR S. CHAS. DE KRAFT 1897-1899
DR W. H. WELCH JAN 1900-JAN 1973

CHAIRMAN OF THE BOARD

DR JOHN S. FULTON JAN 1923-MAY 26, 1928
DR ROBERT H. RILEY MAY 26, 1928

Maryland State Board of Health is SIXTH in Point of Age

Admitted to Area of Death Registration in 1906

STATE BOARD OF HEALTH
Organized May 6, 1874
Act Passed January Session of General Assembly

DIRECTOR OF PUBLIC HEALTH
January 1, 1973

EDITORIAL ASSISTANT
Public Health Education

23 DEPUTY STATE HEALTH OFFICERS
Authorized 1931
They represent the Director of Health in their respective Districts

DIVISION OF LEGAL ADMINISTRATION
Investigates violations and enforces Health Laws Administered by Boarding & Furniture Law

DIVISION OF ORAL HYGIENE
County & Community Organization for Dental School Clinic Program

Massachusetts 1869
California 1870
Minnesota 1872
Virginia 1872
Michigan 1873
Maryland 1874
Admitted to Birth Registration Area 1916

Director of Health and Chairman of the Board
• DR JOHN S. FULTON JAN 1923 to MAY 26, 1928
• Appointed Director Emeritus May 26, 1928
DR ROBERT H. RILEY Director of Health and Chairman of the Board May 26, 1928

BUREAU OF VITAL STATISTICS
1910
First Registration Act 1865 amended 1898 1900 1910 1912 1914 1916 and 1920

REGISTRATION OF BIRTHS, DEATHS, MARRIAGES & DIVORCES

COLLECTING & FILING

TABULATING & COMPUTING STATISTICAL DATA

EXAMINATION, LICENSURE AND REGISTRATION OF MIDWIVES

BUREAU AUTHORIZED BY LAW 1910

BUREAU OF COMMUNICABLE DISEASES
1890-1910

Accurate and Complete Registration of Morbidity Tuberculosis Registration by Legislative Act 1904

EPIDEMIOLOGIST
January 1930

PASTEUR TREATMENT

DIAGNOSIS

V.D. CLINICS

MEDICAL INSPECTION OF SCHOOLS

INVESTIGATION OF NUISANCES

INVESTIGATIONS OF EPIDEMICS AND METHODS FOR CONTROL

Conducts Inquiries into Nature, Source and Vehicles of Infectious Diseases

BUREAU AUTHORIZED BY LAW 1910
Acts of Legislature 1890-1896-1904-1910

BUREAU OF BACTERIOLOGY
1898-1910

CENTRAL LABORATORY AND BRANCH LABORATORIES
1, 2, 3, 4, AND 5

COMMUNICABLE DISEASE DIAGNOSIS

FOOD AND WATER ANALYSIS

BUREAU AUTHORIZED BY LAW 1910

Acts of Legislature 1898-1910

Organized as an Independent Unit in 1920

BUREAU OF CHEMISTRY
1887-1908-1910

EXAMINATION OF FOOD, DRUGS, WATER, SEWAGE AND TRADE WASTE

DEVELOPMENT OF NEW ANALYTIC METHODS FOR FOOD & DRUGS

Analyst Provided by the State Board of Health 1887

BUREAU AUTHORIZED BY LAW 1910

Acts of Legislature 1887, 1908 & 1910

BUREAU OF FOOD & DRUGS
1890-1910

STATE FOOD AND DRUG COMMISSIONER
1910

DEPUTY DRUG COMMISSIONER
1922

ENFORCEMENT OF FOOD, DRUG & PHARMACY LAWS

FOOD & DRUG INSPECTION

SANITARY INSPECTIONS OF FOOD & DRUG HANDLING ESTABLISHMENTS

EDUCATIONAL AND CONSTRUCTIVE MEASURES

COLD STORAGE SUPERVISION

BUREAU AUTHORIZED BY LAW 1910

Acts of Legislature 1890-1910

DIVISION OF PERSONNEL & ACCOUNTS
1910

MONEY ACCOUNTING

PROPERTY ACCOUNTING

PRINTING

Purchase and Distribution of oil Supplies and Equipment

Division Organized by the State Board of Health in 1910

BUREAU OF SANITARY ENGINEERING
1912

Supervision and Control over Water and Ice Supplies Sewerage, Trade Waste Refuse Disposal and Stream Pollution Shellfish Survey

Supervision and Control over Maintenance, Alteration, Extension, Construction and Operation of Systems and Works

Approval of Plans Design of Sanitary Works for State Institutions

Investigation, Supervision of Operation and Maintenance of Sanitary Works, Research

Promoting the Installation of Sanitary Works throughout the State

BUREAU AUTHORIZED BY LAW 1910
Organized in 1912

BUREAU OF CHILD HYGIENE
1922

PUBLIC HEALTH NURSES
IN
Prenatal Service
Postnatal Service
Preschool Service

COUNTY ORGANIZATION FOR
Mothers and Children
Home Visiting
Group Instruction
Preventive Clinics

HEALTH CONSULTATIONS
Prenatal
Postnatal
Preschool

Maintains Healthmobile Travelling Clinic for Children

Instruction in Maternity and Child Care by Lectures, Demonstrations, Pamphlets, Etc.

Supervision over the Training of Applicants for Midwifery License

BUREAU AUTHORIZED BY LAW 1922

Counties having Full time Health Service and Date of its Inauguration

1922 Allegany
1923 Montgomery
1924 Frederick, Baltimore, Calvert & Carroll
1927 Prince Georges & Talbot
1928 Harford
1929 Cecil & Vicomino
1930 Kent, Washington & Anne Arundel
1931 Garrett, Dorchester, Queen Anne's & Worcester
1932 St Mary's, Charles, Somerset & Howard
1934 Caroline

* The Board consists of nine members as follows:
Four Physicians, one Civil Engineer, one Pharmacist, one Doctor of Dental Surgery, the Attorney General of the State and the Commissioner of Health of Baltimore City
† The County Health Officers are appointed with the advice and consent of the State Board of Health (Act of Legislature 1931)

So it is that one of the first recommendations is that the Director be emancipated for this work; that a subordinate chief of the Bureau of Vital Statistics be Registrar, and that the epidemiologist be made head of the Bureau of Communicable Diseases.

For Orderly Management

The next step would be to rearrange the manifold functions of the various bureaus and divisions in more orderly array. Again it should be emphasized that there is no thought of an overnight shake-up, but there is a plea that, as opportunity offers, the definite program be adhered to. At present there are seven bureaus and three divisions under the Director of Health. Gradually these would be metamorphosed in several important respects.

Important among the new divisions to be created would be the Division of County Health Administration and the Division of Public Health Nursing. The former would establish a definite and much-needed liaison between State and county health organizations, with aggressive programs initiated in the divisions; the latter would be a specialized service for nurses working under the general administration.

Another new division—an extension of the work of the present Editorial Assistant, now operating under the Director—would be the Division of Public Health Education. Here the Department would strengthen its link with the all-important public consciousness. Expert direction and a larger personnel would bring interesting facts to the layman through print, films and radio. Cooperation would be courted with vigor.

The arrangement of the Bureaus and Divisions now is distinctly hybrid, caused by the adding of services from time to time. These services have been dropped into bureaus with the effect of complicating their functions. It is with a view to arriving at a more orderly procedure in all of the bureaus and divisions that the new program looks. For example, the Bureau of Vital Statistics performs wholly unrelated functions, such as the registration of births, deaths, marriages and divorces and the examination and registration of midwives, while it is collecting and filing and computing statistical data. Thus efficiency suffers. Eventually this bureau would be done away with, but for the present purposes it is suggested that its director assume the present duty of the Director of Health in signing birth and death certificates. Later the whole business of vital statistics would be transferred to a new unit known as the Bureau of Statistical Method.

The Division of Personnel and Accounts would be kept on and would take care of all business management of personnel. It is interesting to note here the recommendation that "career" positions be created and a system of pensions adopted to assure stabilization of employment and the very special kind of workers needed.

The Division of Legal Administration owes its exist-

tence chiefly to the "Bedding Law," which supervises and licenses the manufacture and sale of bedding and upholstered furniture. It would continue this duty, and it also would pass upon matters now handled by the Attorney General. It would have other interesting duties in that it would assume the enforcement of all health laws including those now administered by the Bureau of Food and Drugs, which eventually would be dropped and whose other duties would pass to the Bureau of Sanitation.

Statistical Work

As already mentioned, the Bureau of Statistical Method would take over the registration of vital statistics, while from the Bureau of Communicable Diseases it would draw responsibility for the important morbidity statistics. And this bureau also would be required to handle all statistical procedure for all departments. It would analyze and interpret, prepare indices of morbidity in communicable and non-communicable diseases, and aid the various county health organizations in statistical studies.

A Bureau of Epidemiology would take over much of the other work now done by the Bureau of Communicable Diseases, whose inspection of school children would go to the Bureau of Maternal and Child Hygiene, and inspection of nuisances to the Bureau of Sanitation. Thus, it would be left to the highly-important specialized work its name implies, as well as to the institution of important research programs into control of all diseases—especially tuberculosis, cancer and venereal diseases. It is felt that really important projects could be instituted, unhampered by duties that might be called extraneous. The presence of great medical institutions in Maryland would aid such programs.

Provision is also made for legal changes that would permit the telephoning of reports on communicable diseases to this bureau for quick attention, to be followed by the written reports now required.

The Bureau of Laboratories would combine two functions which are overlapping and, in some instances, duplicated—the Bureau of Chemistry and the Bureau of Bacteriology. To have a single headquarters of laboratory work, serving all of the various units of the Department and the counties as well, is much to be desired. This bureau, under the program, would cooperate with private laboratories, and the question is raised whether or not it might superintend the manufacture of biological products used by the Department. These serums, vaccines, etc. now are purchased from private laboratories.

The Bureau of Sanitation would assume all of the present functions of the present Bureau of Sanitary Engineering, including water, sewerage, trade waste, stream pollution, shell fish and sanitary works. In addition, it would take the inspection responsibility of the

Bureau of Food and Drugs, including the examination of establishments where food is served. It is also proposed that it be given supervision over sanitation of milk supplies now vested in the State Board of Agriculture.

The Bureau of Maternal and Child Hygiene would inherit all work with school children and midwives—as well as maternal hygiene—and would assume the duties of the present Division of Oral Hygiene. To it also would fall responsibility for the mental hygiene operations of the Department.

The Division of County Health Administration would be an extremely important addition to the Department, for here a connecting link would be forged between State and county health operations. It would assume leadership in county health programs and would gear these programs to the efforts of the various departments of the State Department of Health.

Thus we find the outline of an organization which has all of its many efforts in orderly array. Some legislative changes would be necessary and a great deal of patience required in the long-time institution of the plan.

County Government Program

The second part of the report, which deals with an improvement in general county government that would permit not only a more efficient health administration, but an uplift in all services, goes exhaustively into the present cumbersome arrangement and suggests a simple, businesslike arrangement to replace it. To prove the plan is workable, it is proposed that a five-year trial be given in some selected county, and the financial structure is outlined. The administrative cost of the demonstration is estimated at \$125,000 for the five years—low, indeed, for the results expected.

Under the suggested plan, the Board of County Commissioners would act as an Executive Board. Under it would fall three departments—the Department of County Government, handling the technical services; the Special Advisory Committee, and the Supplemental Budget, which would provide supplemental funds during the period of the project.

For general county purposes the Coordinator would act in many respects as a manager for the corporation that is the county. Under him would be the Division of Financial Affairs, the Division of Personnel, the Division of Legal Administration and the Division of Civil Education. Working in cooperation with him would be the affiliated county and State services, such as public schools, public health, social welfare, the agricultural agents, etc. The County Coordinator should be employed (if the plan is successful) on a permanent basis—

that is, as long as his work is satisfactory. He would try to establish team work among all the agencies concerned and strengthen the unity of the entire county government. In addition, the County Coordinator would head the Division of Personnel and would make a thorough study of the qualifications of the county employees.

Better Cooperation

At present, there is all too little cooperation between the educational, public health and social welfare machinery of the counties, in spite of the fact that they are fields which are closely affiliated. Under the suggested program, it is believed the needed cooperation would be provided and, at the same time, the other affiliated county and State services, such as public works and agriculture, would be better administered. The administrative expense, including the experts needed to aid in setting up the governmental machinery, is tabulated in the report.

As far as the improvement of public health in the counties is concerned, under this plan the set-up would be most fortunate. Instead of the Board of County Commissioners acting at times as the County Board of Health, its functions would be transferred to a County Public Health Council, made up of public-spirited citizens who would be able to advise with the health officer. Much more sympathetic treatment of health matters would naturally be expected, in that the County Commissioners would be relieved of a function to which they are unhappily prevented from giving exclusive attention. However, the county health officer would still be answerable to the Board of County Commissioners, or executive board, of the county. Thus, while the Coordinator is systematizing the general functions of government, he also will be improving and inter-relating the affairs of the different branches.

The investigators of the Rockefeller Foundation and the State Planning Commission subcommittee have spared no detail in the report on the status of public health in Maryland. In Part III they present a wealth of statistical data and interesting observations on conditions in the State. In order to present a full cross-section of conditions in a typical county, Part IV of the report contains an exhaustive survey of Anne Arundel County, made with special reference to public health, medical care, and social welfare.

The report referred to, entitled "Public Health Administration in Maryland" was prepared by Drs. John F. Kendrick and W. A. McIntosh and was reviewed by a subcommittee composed of Drs. R. H. Riley, *Chairman*, A. W. Freeman, J. W. Mountin, H. S. Mustard, Maurice Pincoffs, and Samuel Wolman.

10. ECONOMIC STUDIES OF MARYLAND

REGARDLESS of economic conditions (but especially in times of depression), it is desirable for a community to have a full knowledge of its industry and agriculture. It seems unnecessary to remark that when they are prosperous, the community is prosperous; when they are depressed, the community is depressed in all of its endeavors, public and private. They are the backbone of the public weal.

There should be a lively interest, therefore, in the broad economic studies of Maryland that have recently been inaugurated as an undertaking of the State Planning Commission—studies that will reveal to us conditions as they have been and as they are, with the intervening trends. We will then have a base pattern for a continuing survey which, if followed, will indicate the influences involved and should be quite helpful for future guidance.

For these benefits, the State Planning Commission is indebted to Col. J. M. S. Waring of the Department of Political Philosophy and Social Sciences of Fordham University and to the National Resources Committee for the services of Harry A. Grine, Consultant.

It is not just lately that the Commission has become alive to the necessity of economic studies. Early in 1936 an investigation of the vital industries of Maryland which collectively account for about seventy percent of the productive industrial employment in the State was inaugurated. Of these vital industries, men's clothing, fertilizer, iron and steel, and building construction were marked for detailed study. Already two of these reports (on men's clothing and fertilizer) have been made, under the direction of A. A. Imberman, Consultant, National Resources Committee. A summary of the findings follows. A report on the iron and steel industry by Mr. Grine has just been completed and is also summarized herein.

Colonel Waring's work will encompass a broad economic study of the entire State, and it will constitute

the first application of his method of approach to a single state, although he has made similar national studies for the Works Progress Administration.

Already a preface to the proposed series of reports has been prepared and shortly a base pattern of the State's economy as of 1930 will be completed. It is then proposed to study the changes in the base pattern and finally to diagnose the causes and probable effect of these changes.

Economic Sections

Interesting is the disclosure that for purposes of the study the State will be divided into "Economic Sections" according to their predominant industrial or agricultural characteristics.

At all times in the future trends in the State's economy will be compared with national trends in industry and agriculture. Thus it will be possible at any time to observe just what departure the local activities are making from national trends, and thereby indicate the studies to be made for determining the influences that cause them.

The studies, then, will be diagnostic in character, designed to disclose the cause of so-called "industry shifts," or other changes affecting Maryland's competitive position in interstate commerce—a valuable implement indeed.

Once the base pattern has been drawn and the studies brought up to date from 1930, which will be the second phase of the survey, the perpetuation of the studies is expected to be neither intricate nor arduous. By complementing the pattern with periodic data gathered for the various industrial and agricultural sections, diagnosis will be relatively easy, since the survey will be concerned only with the predominant industries or *products* which show a gain or loss in competitive position. Evaluation of contributing causes and resultant effects would then be made.

A. THE MEN'S CLOTHING INDUSTRY

THERE is a series of paradoxes in the men's clothing industry in Baltimore, one of the vital industries of the State selected for study by the State Planning Commission.

For example, we find that its payroll indices have been somewhat below the national level; that there has been some migration of manufacturing enterprises from the city; that there are comparatively few large "inside shops"

which complete the entire process of manufacture under one roof; that union activities have prevented Baltimore from enjoying a diversified line of clothing, and that average capitalization of firms is small.

Yet, when conclusions are reached, we find that Baltimore's industry has been able to withstand the declining market of the last few years better than most cities. We find that the coming of the labor union in 1931, while damaging the city's competitive position, has stabilized wages and hours of garment workers. And we discover, further, that the large number of "contract shops" (small establishments that assemble clothing cut by manufacturers), has tended to reduce the investments of Baltimore firms.

Baltimore's capital in this industry, therefore, has been in a fairly liquid state. Migration of firms to other centers and to rural areas has been stopped, and there is even a trend toward migration to the city of firms from other cities, anxious to have the advantages of the contract-shop system here. Evidence has been found, too, to indicate that this trend will become more pronounced.

All of this, however, does not take into consideration the effect of the recently-passed national legislation limiting wages and hours of work. What the possible effects of this development probably will be is a subject for further study.

Loss in Variety

The principal loss to the Baltimore clothing manufacturers has been in the variety of products—or the possibility of developing variety. Although they have never done any considerable amount of business in expensive garments, as have Rochester and New York, their primary business has never been in the very cheap clothing field. Rather, the city has been known as a center of medium-priced men's clothing.

Even so, deprivation of its capacity for making low-cost clothing—particularly in a depression market—has hurt the clothing industry in this important center. Responsibility for this loss has been placed solely at the door of the labor union, whose objective in the move was actually to prevent Baltimore competition with New York and Philadelphia. It attained that objective by insisting that Baltimore shops cease all manufacture of unbasted closed coats and semi-basted closed coats (for suits retailing, in the first instance, from \$8 to \$13, and, in the second instance, from \$15 to \$20), and make only the full-basted, or open, coats for suits retailing from \$20 up.

The union's excuse was that no Baltimore shops were equipped for the manufacture of lower-grade coats (designated as No. 1 and No. 2), but its real concern was understood through its national affiliation. In the face of declining business and pressure from the manu-

facturers, however, the union relented in the fall of 1935, and permitted the making of some No. 2 coats in Baltimore, but no No. 1's. There were indications in the report that Baltimore still suffered from its lack of diversity at the time the report was issued in November 1936.

Historical Sketch

The study, prepared under direction of A. A. Imberman, was an exhaustive one and the report traces the history of the men's clothing industry in America from the time when most garments were made by the women folks at home from materials woven on the farm. The rest were made by custom tailors, mainly itinerants.

Before 1825 there was no ready-made clothing industry in the United States, but from that year some garments were made without direct fitting to supply the needs of departing New England sailors and Negroes on the southern plantations. The idea was probably drawn from the second-hand clothing business. George Opdyke, once mayor of New York, was one of the first ready-made clothing manufacturers of record, having opened his plant in 1831.

The year 1846 brought the sewing machine and a new impetus, and by 1859 there were 4,014 establishments, centered in New York, Boston, Philadelphia, Baltimore, Rochester and Cincinnati. But there were no real factories; most of the work was assigned to farm women.

It was the Civil War that launched the industry. To supply a sudden demand for uniforms, large factories were built, some of them doing large-scale business (one company received an order for \$1,250,000 worth of uniforms!). The end of the war found thousands of soldiers returning to civil life and the factories, far from losing business, found themselves suddenly straining to supply a fresh need—for civilian clothes for these men.

The report traces the rapid growth of the business—the frontier distribution points for restless pioneers; the spread of immigrants over the country; the general acceptance of ready-made suits; the advent of labor-saving devices, such as the multiple cutting knife; the development of team work and the killing pace of the task system invented by Russian immigrants; the arrival of gas and electricity and the foul atmosphere of the contract shops, sweatshops and home finishing shops; the introduction in 1895 of the large inside shop with better working conditions and performing the entire operation itself; recognition and appreciation of styles at the turn of the century; the advent of the tailor-to-the-trade houses and the jobber-capitalist who underwrote entire plant productions; better machinery and pressing machines, and so on down to the conditions of today.

Baltimore Fifth

Baltimore's position in the men's clothing industry

has ever been an important one. Today, with 7,297 workers (1934 figures) it ranks fifth among the centers of the men's (dress) clothing industry. The ten leaders, in order of importance, are New York, Chicago, Philadelphia, Rochester, Baltimore, Cincinnati, Cleveland, Boston, St. Louis and Milwaukee.

These ten cities, we find, employ (as of 1933) 69.3 percent of the total of wage earners, pay 75.6 percent of the total wages, manufacture 79.5 percent of the total value of products and have 81.5 percent of the establishments. They are the backbone of the industry. The leader, of course, is New York; it has always been so and is likely to continue so.

For the vast amount of statistical data in the research, it was necessary to select a key year. So 1929 was pegged at an arbitrary 100 in the indices, and all deviations before and after that year were expressed in terms of plus or minus. At the start of tabulations, it was found that Baltimore, at the time the report was made in 1936, stood at 77.9 in the recovery index, compared with 85.4 for the nation as a whole. It was in seventh place in recovery, Cincinnati leading the list at 104.5, largely, it was found, because of its door-to-door system of sales (an old depression custom), and New York at 100.6, because of the great diversity of its products.

But here we run into some surprising facts. Most of the states in which the clothing centers were located ran ahead of their manufacturing cities in the recovery indices. The two exceptions were Maryland and Pennsylvania. Why? Well, at the very point where Baltimore's and Philadelphia's graphic barometers of employment began to drop, those of Maryland and Pennsylvania began to rise. In other words, the rural sections were getting new manufacturing units of the clothing industry from the cities. As a matter of fact, the trend is noticeable as early as 1929.

Drift to Rural Areas

Investigation disclosed that many urban manufacturers had started a drift in many sections of the country toward rural areas for several reasons. Small towns offered factory sites rent free and tax exempt for several years and moving expenses from the cities. Besides—and of transcendent importance—they offered labor at about half the city wage. Of course, there was a loss to the manufacturer for one or two years because of green help and material waste, but in the second or third year the manufacturer was able to earn enough profit in six months to pay all his initial losses. Since the cost of labor is about a third of the cost of a garment, the saving was tremendous.

Moreover, the rural sections offered the manufacturers escape from unionization of shops.

Besides these manufacturers, a large number of small

contract shops were set up in the hinterlands. With their cheap labor, it was possible for them to offer most attractive terms to the city industry, receiving the cut cloth and returning finished garments at a great saving, despite shipping costs.

But the earlier migration trend did not foresee the NRA and its minimum wage schedules. The manufacturers might dodge the unions, but they could not dodge the long arm of the Government. The rural plants suddenly found labor costs almost as high as in the city. The city manufacturers found little profit in the rural contract shops and dropped them for their city counterparts. The only advantage left the rural industry was escape from unionization. The result was that the rural manufacturer stayed where he was, and most of the rural contractors went out of business.

But that was the national trend. Again Maryland and Pennsylvania were the exceptions. There was still a great difference in the union wage scales of New York City and Philadelphia on the one hand and the smaller centers of Pennsylvania and Maryland. The average annual wage in New York was \$1,028.57. Maryland's was \$746.08, Pennsylvania's \$568.61—both considerably under the national average wage. It is interesting to note, however, that Baltimore's average, \$765.39, was only slightly higher than that of Maryland as a whole. Our wage under the NRA might have been even lower had not Maryland been put in the "Northern" grouping of states with a minimum wage of 40 cents an hour against the "Southern" group's 37 cents an hour.

It is worth observing, in passing, that the average annual wage of the clothing industry has been lower than that for all manufacturing industries in all states. However, it is considered unlikely that even the recent wage-hour legislation will change the relative position much, since it is explained primarily by the seasonal character of the business.

Increase in Plants

Another interesting fact comes to light in the index of the number of productive establishments in the various centers. Where most of the cities fell below their 1929 total of establishments, Baltimore showed an increase—in fact, it showed the greatest increase of all cities, with one and a half times as many productive units in 1934 as it had in 1929.

And right there a most significant point is touched, going far to clarify the city's position. With an employment index of only 77.9 percent of its 1929 employment, Baltimore had 151.4 percent of the number of plants it had in the key year. In other words, as employment went down, the productive units went up. Which means that Baltimore labor was being employed in smaller plants. The situation was entirely the reverse in New York and

Cincinnati, which meant that labor was being employed in larger plants. Maryland, incidentally, followed Baltimore closely in this trend.

In the loss of value of its product, Baltimore suffered with all other producing cities, although to a lesser degree than most. The United States as a whole found the value of its product dropped to 49.4 in 1933 from its 100 in 1929. Baltimore products dropped in value to 52.8.

Whatever the merits and demerits of the contract shop system (and plenty of both are cited in the report), it is certain that the quick adoption of this system brought Baltimore through the extremely lean years in comparatively good shape. The study brings forth a wealth of detailed data to show in exhaustive fashion how the inside and contract shop utilization fared by comparison.

Capitalization

The inside, or complete, manufacturing units are heavily capitalized, mostly at greater than \$50,000, with \$75,000 none too great. There are manufacturers, however, whose capital investment runs in excess of \$10,000,000. Even the smaller capitalizations are dependent on an active turnover.

On the other hand, a contract shop may be set up with a very small capital investment—not over \$500 in many cases. Machinery may be rented, purchased second-hand or paid for out of current receipts. But there are exceptions; there are some very large contract shops, heavily financed.

So it was that when depression gripped the clothing industry, when unions enforced their demands and when the NRA forced wages upward, it was the inside shops that suffered. Capital was not supported properly, the manufacturers could ill afford strikes and the tying up of heavy investments.

The contract shops fared better, the manufacturers who employed them fared better not only because they could get work done cheaply by "auctioning off" the jobs among the small establishments, but because the small shops could absorb even the additional wage demands better than the complete plants with their top-heavy capital structures. The largest net profits were shown by those manufacturing concerns employing contract shops entirely, the next largest by those letting out part of their work and the smallest profits of all were shown by firms that performed all operations in their own shops.

There is an excellent picture of the trend in the series of graphs that compare the curves of inside shops and contract shops in the various clothing-producing states. Except in Ohio and Illinois, one notes that there has been a marked drift to the contract establishments in these states, in three cases besides Maryland, the lines crossing, but in Maryland the quick trend from 1929 is noted. The inside and contract lines form a firm and sym-

metrical X, with the point of intersection at 1931.

Employment Ratios

At the time the survey was made, we observe the interesting phenomenon that 64.6 percent of the men's clothing employes in Maryland were in contract shops, while in the industry as a whole the preponderance, or 53.3 percent were in manufacturing shops.

Thus we see that the liquidation of manufacturers' shops and the shift to contract shops began in 1929 and reached its peak with the incidence of the NRA. All of which explains why Baltimore's capital was in fairly liquid state during the leanest years and, until the advent of the labor union, the city's industry was consistently able to under-sell the market—an advantage that the union quickly ended.

But it must not be thought that Baltimore's advantage was gained without cost. The quality of workmanship in the contract shop is, on the average, inferior to that of the self-contained plants. Again, clothing employes in Baltimore contract shops work fewer man-hours per year, receive smaller wages per man-hour, are paid less per week than the one-third of the city's clothing employes in inside shops. In short, the industry in Baltimore is outweighed with the most unstable elements.

The Baltimore industry, with its capital spread thin over an increasing number of small shops, weathered a serious storm in 1933 better than most of the others—through good fortune, it must be admitted, more than through good management. Woolen mills had been wont to grant easy payment terms to the clothing manufacturers, but when the NRA was imminent the customary discount on woollens was withdrawn and the terms fixed at 60 days, net. Since materials represent some 50 percent of the selling price of a man's suit, it can be seen that the shortening of buying terms was a serious blow to the shops.

Escape from Danger

It had been expected that the arrival of the NRA would increase prices on woollens. Already saddled with heavy additional costs in inventory under the mill terms, many clothing manufacturers invested heavily in additional inventory to anticipate the expected rise in prices. When, in 1934, these goods had to be sold at falling, instead of rising, prices, it was a sad blow to the manufacturers.

But Baltimore's industry had not piled up inventory; it ordered, with several exceptions, its usual quota of woollens, thus escaping losses from too-heavy supplies.

Aside from the inherent disadvantages of the contract shop system, no particular concern was felt at the time of the report, for the future of the industry here. Instead, there was an indication that new units might come here from elsewhere to enjoy manifest advantages.

B. THE FERTILIZER INDUSTRY

MARYLAND'S fertilizer industry—one of the vital industries of Maryland studied exhaustively by the State Planning Commission—appears to be in no danger of losing its leading position among those of all the states of the Union. Instead, it would appear from the report, issued in January 1938, that the State's great six-and-a-half-million-dollar-a-year industry is destined for an increased margin of leadership. For this study the National Resources Committee again loaned the services of A. A. Imberman, research consultant.

Maryland has always led. Since the importation of the first Peruvian guano by John Stewart Skinner, a farm journal editor of Baltimore, in 1824, the State has never lost its top position. Since Dr. P. S. Chappell and William Davison turned out in Baltimore the first batch of chemical fertilizer (1850) to be produced in America, the industry itself has flourished.

With the rest of the industry, Maryland's fertilizer manufactories have had their troubles—some basic, some due to business methods. But Maryland has suffered less than the others, and probably will continue to suffer even less by comparison. The industry must depend on one class of customer—the farmer—and his changing fortunes. Its business is highly seasonal. Credit requirements are large, sales periods are short and an enormous and unwieldy merchandising staff is used to meet competition. Prices, for a variety of reasons, have failed to drop commensurately with farm prices and wholesale commodity prices.

But, while no "cure" for the industry's ailments is offered in the State Planning Commission report, these problems are clearly pointed out, together with their principal causes. Of paramount importance is a more flexible price range that might yield to business "lows."

Maryland owes her national leadership chiefly to the fact that she is the foremost producer of superphosphates—the real backbone of the industry. She owes her bright prospects for future growth to the increasing demand for higher plant food content in fertilizers—that is, more concentrated mixtures to provide greater benefit to the soil and to cut down shipping costs. It must be conceded that more plant food means more superphosphate production.

Price—The Limiting Factor

The limiting factor here, however, is the comparatively inelastic price range which at present maintains in superphosphates—a factor with which, the report implies, the industry must deal.

The health of the Maryland industry is due in large part also to the fact that, while the hourly wage rates here are not particularly high, the average annual wage is

ducing state. Thus, the employe in this State is in much better case than in the industry as a whole, since the production of superphosphates is spread over the whole year.

There are three essential elements in the composition of commercial fertilizer: *Nitrogen*, the chief sources of which are nitrate of soda, cyanamide, nitrate of lime and sulphate of ammonia, among inorganic materials, and cottonseed meal, dry blood, abbatoir tankage and fish scrap among organic materials; *Phosphates*, derived from acid phosphate (ground phosphate rock treated with sulphuric acid), basic slag from the Bessemer steel process and bond products; and *Potassium*, which comes chiefly from German potash salts and distillery waste of the crude molasses used in alcohol fermentation.

Each has its special effect on growing plants. Nitrogen produces rapid development of the leaf and hastens the blooming period of such crops as cotton; phosphoric acid stimulates early root growth, promotes early maturity of crops and stimulates the growth of fruit and seeds, while potash stimulates the formation of starch for rigidity of stem or stalk and promotes plant health and resistance to disease.

It is in the mixing of these essential elements, together with "filler" materials (which have no plant food value), that we find the 1,291 grades, or formulae, of mixed fertilizer as it is used on the soil. Until 1856, Peruvian, Mexican and West Indies guano—together with domestic bone meal—were the only large sources of phosphate available in this country. It was the discovery of the South Carolina rock phosphate deposits (and later discoveries in Florida and Tennessee) that gave real impetus and permanence to the chemical fertilizer industry in the United States. Acid phosphate became the most important of all, and it was in the development of this material with a content of from 16 to 18 percent that produced the superphosphates upon which the strength of the Maryland industry is founded.

Why Maryland Leads

But Maryland's advantage lies about equally between its geographical position and the sound development of its various industrial plants. Very little fertilizer is used in the western states, most of the consumption being in the East, with the vast concentration in the South. The South Atlantic states, with only 7.5 percent of the country's total crop acreage, consume about half of the total annual production (6,160,000 short tons in 1935), with an average of 261 pounds per crop acre. The East North Central states, with 15.6 percent of the crop acreage, uses about 10 percent of the fertilizers. This is



Courtesy Baltimore Association of Commerce.

BALTIMORE AND ITS HARBOR—THE HUB OF THE STATE'S ECONOMY.

explained by the fact that western states do not need plant food, while the eastern soil is either naturally low or has been exhausted by farming methods over centuries of planting.

So it can be seen that Maryland is in an extremely strategic position with relation to her market. But here we reach a paradox. Since fertilizer is a heavy material with low specific value, there has been a tendency for plants to locate close to their market to escape heavy shipping costs. Thus we find that Georgia has the greatest number of plants—one-fifth of all in the United States—with North Carolina second and South Carolina next.

Yet Maryland, with fewer plants, is the largest producer of fertilizer of all states. Her output varies from 13 to 17 percent of the national production of all kinds, and from 20 to 35 percent of the all-important superphosphates. The next is Georgia with around 11 percent. The answer is that many of the plants in the South are relatively small mixing plants which buy their plant foods in the open market, and Maryland plants supply them much of their material.

There are three classes of fertilizer plants—those that make their own sulphuric acid and, with it, their own superphosphates and mix these with other materials; those that purchase sulphuric acid and make their own superphosphates and mixes; and those that purchase superphosphate and other materials and mix these fertilizer materials only.

By way of comparison, Maryland has six of the first class, five of the second and thirty-eight of the third, while Georgia has seventeen of the first, eighteen of the second and 148 of the third. Yet Maryland outstrips Georgia in production!

Six Big Companies

The answer is that there are six powerful companies that dominate both production and distribution, all with large producing plants in Maryland. They are the American Agricultural Chemical Company, the Armour Fertilizer Works, the International Agricultural Corporation, the Royster Guano Company, Swift and Company Fertilizer Works and the Virginia-Carolina Chemical Company. Being producers of raw materials, these six great companies enjoy cost advantages over smaller competitors who must buy phosphate rock and sulphuric acid in the open market. Rarely, the smaller companies do find open-market prices below production costs of the big companies. But in general the smaller mixing plants take some 60 percent of the superphosphate output of the big plants.

Incidentally, it is interesting to note that the fertilizer industry is the principal purchaser of all of each of the ingredients of the fertilizer, including the versatile sulphuric acid.

Because its foundations rest in superphosphate production, with its all-year operation, the Maryland industry has weathered the storm of depression extremely well. Indeed, it has withstood the slump in all categories of fertilizer produced, with a smaller decline than the national curve and with a faster recovery from the depression low. With the 1929 production pegged arbitrarily at 100, Maryland's fertilizer index figure at the 1933 "bottom" was 72.8, while that of the United States was 55.7. And by 1935 Maryland had jumped to 77.3 while the national index reached only 69.3. And, since the United States figure for 1935 includes the high Maryland output, it would seem that the other states fared less well than the national index would indicate.

Employment in Maryland

No less indicative of the stability of the Maryland industry has been its employment record. Not only has the industry here employed more workers (2,254 in 1935) than any other state, but it has paid the highest average annual wage of all other states except California. Unlike the dry-mix plants in other states, whose business is highly seasonal, the California plants offer unusually steady employment because of the remarkably long planting season. But California's industry is comparatively small and is hardly to be compared.

The Maryland average annual wage in 1935 was \$909, which was 44.7 percent higher than the national average because of the excellent spread of employment. However, the hourly wage was relatively low—somewhere between a high northern rate and a low southern rate. It is important to note that common labor represents 67.6 percent of man-hours worked in the industry.

Labor, however, is not the greatest cost factor, either in this or any other state. It is quite small, in fact—from 6 to 7 percent. Raw materials represent 66.1 percent of the cost, which probably accounts for the relatively sluggish movement of the fertilizer price curve in the depression.

It is the inflexibility of price, particularly in superphosphates, that appears as the only obstacle to an otherwise certain increase in the State's fertilizer business. With a rapidly expanding demand for a higher concentration of plant foods in fertilizers, and consequent low shipping costs, the other elements—nitrates and potash—have dropped to more competitive levels than superphosphates. Movement in these elements have increased as a result, with proportions of each having risen in fertilizer mixes while phosphoric acid content has dropped. Nevertheless, it is felt that the trend is certain to continue benefits to the superphosphate manufacturers, whether their prices become more competitive or not.

But the State Planning Commission report warns that if the inelasticity of prices of superphosphate is main-

tained, serious trouble may result in the next dip of the business cycle.

Dry-Mix Plants

One anticipated effect of the growing demand for high plant food content is a reduction in the large number of dry-mix plants in the South. The Maryland manufacturers had much to do with this spread of small units a decade ago in an effort to cut down expensive shipping of mixed fertilizer from Baltimore. They began to spread small plants near their concentrated markets, ship base goods and have the valueless filler added in the mixing units, but when the economic collapse came, these manufacturers with dry-mix plants strung around the South discovered it was cheaper to pay the carrying charges on big mixing centers at home.

Competition among small mixing plants is heavy and somewhat mobile. They are easy to set up—and as easy to shut down. All one needs to become a fertilizer producer of sorts is a formula, a concrete mixer, some shovels and a little credit to buy base materials.

Although less affected, on the whole, than those of many other states by the spring rush, the uncertain credit risks and the cut-throat competition, the Maryland manufacturers face, in some degree, the problems of the

entire industry. The mixing plants that must do all their business in a few short weeks of early spring and must employ a veritable army of salesmen, dealers, wholesale and retail outlets, farmer cooperatives and agents of all types, are distinctly the business of the big companies. So are the problems of credit which must be extended to the farmer, often ending up in bad debts.

As many as 50,000 sales representatives of all kinds have been employed by the industry in a single year. Since 70 percent of a year's production, or about 4,200,000 tons, are sold by this host, it would amount to something like 84 tons per man—or an annual income for each of from \$100 to \$200.

In the report, an executive of one of the big corporations is quoted as observing that "too many dealers are trying to sell fertilizer. Every fertilizer manufacturer wants a dealer in every town. But the manufacturer would be better off and dealer would be better off if the manufacturer had fewer, but exclusive, agents. For all of them could then do enough business to justify their putting into the business more time and more service to the farmer."

The report, containing a great deal of statistical data as well as analyses of the various phases, should be of help to the fertilizer industry of the State.

C. THE IRON AND STEEL INDUSTRY

WHEN NEARLY six percent of all the industrially employed people of the State and seventeen percent of those in manufacturing and mechanical industries look to a single industry for support, the importance of that industry to the State is manifest. When the largest component of this industry in the State ranks among the big ten of the Nation, its importance becomes all the more apparent. And when such an industry as a whole shows a general upward trend as technologists develop new uses for its products, the future must appear brighter to employees, industry and State.

In such case does Maryland find herself as one of the centers of the iron and steel industry, the top-ranking salient of the durable goods industries. Moreover, a close and expert examination of the iron and steel operations in the State shows that Maryland's prospects are better than average; that she weathered the lean years of depression better and recovered more rapidly than did the national group of states.

These observations are drawn from the most recent of the studies by the State Planning Commission of the vital Maryland industries. The report, which presents

highly-revealing statistics and interpretations for private and public consumption, has just been finished. It was prepared by Harry A. Grine, a consultant assigned by the National Resources Committee.

Maryland was one of the country's pioneer iron-producing states. But, curiously enough, she owes none of her present importance in this field to her early leadership. In the beginning, the ore deposits hereabouts were of paramount importance to the young country whose population was concentrated on the eastern edge of the continent. Today it is the State's geographical position in relation to eastern and foreign markets, her valuable location on tidewater and her labor supply that account for her strategic advantage.

Birth of an Industry

The old Maryland iron industry died; a new one was born of other parents. It was Maryland metal that roared defiance at the British in cannon; Maryland shot that beat back the red-coated legions; and Maryland iron figured largely in the War between the States. But the mines around the Chesapeake country have been un-

worked for more than half a century, and the furnaces that made ploughshares and guns for Colonial America are but skeletons today—relics, in some cases, that draw the curious gaze of traveling moderns.

But in some essentials the old and new industries are akin. When there were no railroads and no roads worthy of the name, such heavy stuff depended almost wholly upon water for transportation. And the operations were within easy reach of the centers. Today the enormous plants at Baltimore still take advantage of low water rates, still serve the big cities of the East, although the leading states—Pennsylvania, Ohio, Indiana and Illinois—have larger markets in the West.

Principal plant and backbone of the State's iron and steel industry is the mammoth Bethlehem Steel Corporation plant at Sparrow's Point, one of the country's Big Ten, spreading over some 2,000 acres of land and containing one of the most diversified chains of manufacturing operations in the field—a diversity that gives it a favorable competitive position and marks it as one of the finest integrated plants in the country.

There are only three other plants in the State—the Eastern Rolling Mills at Colgate, processing metal sheets entirely in considerable quantity; the N. and G. Taylor Company at Cumberland, making black plate, tinplate and terne plate; and the Baltimore and Ohio Railroad works at Cumberland, reduced now to a plant that reclaims scrap and converts it into bars and rods. None of these approaches the Sparrow's Point operation and none is integrated.

Although the Bethlehem Steel Corporation's entry into the Maryland picture in 1916 signalized the greatest growth in the industry here, Sparrow's Point had been a scene of important operations for nearly thirty years before that. It was in 1887, shortly after the expiration of the old Maryland iron industry, that the Maryland Steel Company built its first units at the mouth of the Patapsco. It had started out with the intention of constructing four blast furnaces for making pig iron from ores imported from foreign countries. But new developments in steel-making resulted in expansion of the plant to make Bessemer and Open Hearth steel ingots and to roll them into steel products.

Expansion of Industry

When the Bethlehem Steel Corporation purchased the company, along with the Baltimore Sheet and Tinplate Company, a series of expanding operations began that culminated in the recent completion of a huge program that gave Sparrow's Point several new mills, including a modern hot strip mill that is a marvel of efficiency. And today we find the plant capable of turning out 1,663,200 gross tons of pig iron, 2,467,000 gross tons of steel of various kinds, 1,590,000 tons of coke (with facili-

ties for recovering by-products) and 4,800 tons of steel for castings.

And in the big mills we find among the wide variety of manufactured products such hot rolled products as rails, plates, black sheets, black plate, bars, wire rods and skelp, and such finished products as fabricated structural material, flanged and dished plates, galvanized sheets, tinplate, pipe of various kinds, plain, galvanized and barbed wire, bale ties, nails and staples, steel castings, iron castings and brass and bronze castings.

Most of the ore used at Sparrow's Point is shipped into Baltimore in the company's own ships from the company's own mines in Cuba and Chile—the ore from the Chilean mines at El Tofo averaging fifteen percent higher iron content and having less impurities than the Lake Superior ores on which so much of the industry relies. In Chile labor is cheap and, although the ore must be shipped 1,500 miles to Baltimore, the Bethlehem Steel is still in a favorable competitive position.

Baltimore's advantage in ore costs, however, is partly offset by Pittsburgh's close proximity to coal and limestone supplies. The Bethlehem Steel Corporation's confidence in its selection of the Sparrow's Point location is attested by its constant expansion of these facilities. Moreover, increased freight rates are certain to show greater points in Bethlehem Steel's favor through water transportation of its products.

Maryland's Stability

One has but to glance through the array of charts in the Planning Commission report to obtain a clear picture of Maryland's favorable position in the industry all through the depression. In general, the State's curves have shown the same hills and valleys as have the national curves. But in most cases the plotted average shows our industry well above the national line. With the rest of the industry, but not so drastically as the national average, Maryland's production curve took a terrific dip in those dark days of 1932, dropping to but 22 percent of plant capacity. But Maryland's industry recovered more quickly.

The indices use 1929 as a base year and the curves are plotted from that point of coincidence. In employment, we find the Maryland line dropping below the national line at only two points—once for a brief period in 1929 and another in 1933—while the Maryland average is well above the national. The payroll curves are even more pronouncedly high.

The jagged lines in these graphs show how uncommonly sensitive is the iron and steel industry to changes in general economic conditions—a sensitiveness that is surprising in view of the wide diversity of its products. Fluctuations in its operations are among the most severe in the whole industrial picture, with concomitant rellec-



Courtesy Bethlehem Steel Company

BETHLEHEM'S STEEL PLANT AT SPARROWS POINT WHERE THIS STATE VITAL INDUSTRY IS CONCENTRATED

tions in employment. There are times when personnel rolls are full and the mills are straining; others when there are layoffs that keep skilled and semi-skilled workers dangling about, waiting for things to pick up again.

It is interesting to observe, therefore, the factors that are held responsible and the anticipated developments that may smooth out the peaks and valleys to a greater degree. Stabilization of predominant markets and the creation of new markets are held necessary before the entire industry can reduce those fluctuations.

Predominant Factors

A chapter of the report is devoted to a study of the predominant products and the predominant markets, showing how widely these important factors change. Predominant products, it is explained, are those which represent, on a tonnage basis, collectively about 70 percent of the total produced by the industry. Predominant markets are those which take about 70 percent of the production.

Over the country, eight products account for over 70 percent of the iron and steel production—bars; black plate; pipe, skelp and tube-rounds; plates, rails, shapes, strips and wire rods. Although bars have been consistently in greater demand, the others have varied widely in their positions from year to year.

The predominant national markets are agriculture, automotive, building, metal containers, oil and gas and mining, railroads, highways, machinery and exports, with automotive a more consistent leader, giving way at times to the building industry, which itself runs up and down the scale. Positions here change as radically as the position of the products.

In Maryland the predominant products are plates, rails, sheets, tinplate, tubular products and wire rods. Bars have led more consistently than the others, with tinplate next, but positions and demands of all others have changed as radically here as elsewhere.

How wild these fluctuations can become is illustrated in the developments of the last several years. During 1936 and early 1937 there was a meteoric rise, the national output reaching a tonnage close to the all-time 1929 mark, and Maryland soaring above that mark to a new record of its own. This was followed by an abysmal skid that brought the national production to a low of 22.1 percent of capacity early in July 1938. But then lower prices were announced, so up went the curve to 36.1 percent and a continued rise until it rested at 45 percent during the third quarter of this year.

"Miscellaneous Demand"

And here enters another factor that is of more than passing interest—"miscellaneous demand," which is cred-

ited for much of the recovery. This gentle intruder into the situation had been pretty small until recently. Where, from 1922 to 1926, the rail and building industries had been taking more than 42 percent of the output of iron and steel, they dropped to less than 20 percent and "miscellaneous demand" made itself prominent with 31.2 percent.

No one credits this stranger with an ability to outshine permanently such giants as automobiles, railroads and building, but there is a feeling that this evidence of a wider field of users will be another stabilizing influence.

Incidentally, it is significant to note that the increasing use of sheet metal in automobiles, trucks and other transportation equipment and in metal containers is of particular promise to Maryland's industry, especially equipped for large volume in these fields.

As for employment, Maryland's record is better than the national by a considerable margin. Accepting 1929 as 100, Maryland iron and steel employment dropped off with the rest of the country. In blast furnaces, the State's index dropped below the national level to 47.7 in 1931, but it recovered more rapidly, reaching 58.2 in 1933, against the national 48.4, and 84.1 in 1935. The rise in steel plant employment in Maryland was even more impressive. Where the national index hit 67.1 in 1931, Maryland's was at 80.6, and in 1935 it rose to 103.9 to tower above the national average of 91.1.

The iron and steel industry is dependent on a large percentage of skilled and semi-skilled labor. Business fluctuations, therefore, have distressing effects on this labor, which hesitates to leave the scene of its best efforts and hangs on through slack periods. This problem has been alleviated somewhat by the share-the-work programs which has spread the employment a bit thinner, giving some work to a greater number of employees.

Technology Contributions

Technology, the much-maligned black beast of labor, has operated at high efficiency in the steel industry, yet it is worthy of note that the labor-saving machinery has not cast more men out of work. In spite of all the new mills—including the continuous mills—employment reached an all-time high in December 1936, with over a half million men on the payrolls. And the basic wage rates were at the highest level in the history of the industry.

It is explained in this connection that the products turned out by the machinery are so much cheaper and better that the use of steel is increasing greatly.

In the wage analyses—presented in considerable detail—Maryland iron and steel workers fare much better than the United States average, and far better than those in the low-cost producing state of Alabama.

Finally, in a section on technology, the report brings out the fact that the products of the steel plants are being improved constantly, with greater likelihood that uses will continue to grow. It brings out, too, the fact that the expensive and widespread expansion of both the

Bethlehem and United States Steel companies tends to concentrate more power in these firms and to make competition by smaller operators all the more difficult. With its fully integrated plant, Maryland would appear to be in excellent position for future growth in the industry.

APPENDIX

STATE PLANNING ACT

LAWS OF MARYLAND, SPECIAL SESSION, 1933

CHAPTER 39.

AN ACT to create the State Planning Commission, and prescribing its duties and powers.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the State Planning Commission is hereby created. The Commission shall consist of five members, of whom three shall be selected as follows: one shall be a member of the State Roads Commission or the chief engineer of the commission, whichever shall be designated by the Governor; one shall be a member of the State Board of Health or the Director of Health, whichever shall be designated by the Governor; one shall be a member of the Board of State Aid and Charities or the Secretary of the Board, or the director of its welfare activities, whichever shall be designated by the Governor. The Governor shall have power to change the designations from time to time. The other two members of the Board shall be appointed by the Governor, and shall serve for terms of four years, and until their successors qualify, except that the terms of those first appointed by the Governor shall begin on the date of the appointment and shall terminate on June 1, 1935. In case of a vacancy, the Governor shall make an appointment for the unexpired term. All members shall serve without compensation, but they shall be allowed any reasonable expenses incurred in the performance of their duties under this Act. The Governor shall designate the Chairman of the Commission. The Commission shall maintain offices which may be located in any other offices of existing departments of the State. Three members of the Commission shall constitute a quorum, and no action shall be taken or refused unless by the concurring vote of not less than three members. The Commission shall keep permanent and complete records of its proceedings, meetings, hearings, orders and decisions. The Commission is hereby authorized and empowered to employ such persons as may be necessary in the performance of its duties and in the exercise of its powers, engineering, clerical or otherwise, and pay the compensation and incur any necessary expenses, within the limits of any funds provided therefor.

SEC. 2. *And be it further enacted,* That it shall be the duty of the State Planning Commission to prepare or coordinate plans for the physical development of the State in so far as such development may be appropriately directed or influenced by State agency. It shall, among other things:

1. Prepare and adopt plans for complete systems of State or regional highways, expressways, parkways, parks, water supply and forest reservations and airways and air terminals.

2. Advise with the various State departments and bureaus and with local authorities and individuals, with a view to the co-ordination of all physical development plans, from whatever source originating, that are related to State activities.

3. Make surveys of rural land utilization with a view to the determination, among other things, of the areas suitable for field crops, for reforestation, for watershed protection, for recreation, for summer residence, and for urban expansion.

4. Draft for submission to the General Assembly such regulations affecting the use and development of property as are deemed reasonable and necessary in the interest of orderly and co-ordinated development, of preserving the integrity of officially approved plans, or of conserving the natural resources of the State.

5. Collect and publish information relating to welfare problems affecting the people of the State of Maryland, and make such recommendations thereon to the General Assembly as may seem advisable and proper.

All public officials shall upon request furnish to such commission within a reasonable time such available information as it may require for its work. The commission, its members, officials and employees in the performance of their functions, may enter upon any land and make examinations and surveys and place and maintain necessary monuments and marks thereon. In general, the commission shall have such powers as may be necessary to enable it to fulfill its functions, promote state planning, or carry out the purposes of this act.

Every state department, commission, board or official, before requesting a legislative or executive approval of a plan or the authorization of an appropriation for a major public improvement related to or affected by any general plan or plans prepared under authority of this act, or before requesting a change of use or disposition of real property owned by the state or in which the state has an interest shall make a written request to such planning commission for its recommendations, and shall give such commission a reasonable opportunity to study and make its recommendations thereon.

SEC. 3. *And be it further enacted,* That, the State Planning Commission shall prepare and submit to the General assembly for adoption plans for a system of existing and proposed State highways and parkways, together with regulations essential to promote an appropriate orderly and co-ordinated development of lands along or adjacent to such highways and parkways. Such plans and regulations shall be designed to promote health, safety and the general welfare; to facilitate the movement of through traffic; to provide for the accommodation of local traffic, cross traffic and traffic to and from the abutting frontages; to establish front yard or setback lines along abutting frontages; to regulate the location of filling stations, garages, lunch stands, outdoor advertising signs and other uses of property along the adjacent frontages; to regulate the subdivision of land along or adjacent to such highways and parkways; and to conserve scenic and historic places and the natural beauty of the countryside. Such plan and regulations may be adjusted to the varying conditions throughout the state and to the character of existing official plans and regulation in force in any county or municipality. Before approving of such plans and regulations for submission to the General Assembly the Planning Commission shall hold public hearings thereon. Such plan and regulations when approved by the General Assembly shall be known as the official State highway plan.

SEC. 4. *And be it further enacted,* That it shall be the duty of such Planning Commission to prepare and keep up to date a long-term development program of major State improvement projects. The various state departments and officials shall prepare and submit to such Planning Commission their proposals for major projects. It shall be the duty of such Planning Commission to co-ordinate such plans and proposals with each other and with the general plans of such commission, and as a result to submit to the Governor and the General Assembly a report at least once every two years showing such commission's recommendations and program for improvement projects.

SEC. 5. *And be it further enacted,* That the State Planning Commission is hereby authorized, for the information of the State, to prepare and make maps, planning studies and surveys for the collection of data for zoning, soil conditions, land use and classification, population distribution, schools, park and playground development, port, harbor and waterway work, parkways, highways, traffic, transit water supply, drainage and sewerage, long-range financial programs, real property inventories, tax maps, building and housing conditions, subdivision control and other subjects affecting the health and welfare of the people of Maryland.

SEC. 6. *And be it further enacted,* That the State Planning Commission is hereby authorized and empowered to use and expend any funds coming into its hands for the purposes of this Act, and is hereby authorized and empowered to accept and use any funds provided by the United States Government, or any agency thereof for such purposes.

SEC. 7. *And be it further enacted,* That this Act is hereby declared to be an emergency law and necessary for the immediate preservation of the public health and safety, and being passed upon a yeas and nays vote, supported by three-fifths of the members elected to each of the two Houses of the General Assembly, the same shall take effect from the date of its passage.

Approved December 15, 1933.

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PUBLICATIONS

(Copies are available upon request without charge unless otherwise noted.)

- ✓ 1. CERTAIN FINANCIAL ASPECTS OF LOCAL GOVERNMENTS IN MARYLAND. November 1934. Mimeographed. 97 pages. Illustrated.
- ✓ 2. POPULATION OF MARYLAND, 1930-1945. (Estimated by Cities and Counties). 1934. Mimeographed. 25 pages.
- ✓ 3. POPULATION OF MARYLAND, 1790-1930 (By Cities and Counties). 1934. Mimeographed. 25 pages.
- ✓ 4. POPULATION OF INCORPORATED TOWNS OF MARYLAND, 1790-1930. 1934. Mimeographed. 23 pages.
- ✓ 5. TEN-YEAR HIGHWAY CONSTRUCTION PROGRAM. March 1935. Mimeographed. 53 pages. Illustrated.
- ✓ 6. PRELIMINARY ESTIMATES OF PROBABLE EXPENDITURES FOR PUBLIC WORKS BY THE STATE OF MARYLAND, 1934-1943. May 1935. Mimeographed. 33 pages.
- ✓ 7. PRELIMINARY STATEMENT ON PROBLEMS OF LAND USE. July 1935. Mimeographed. 127 pages. Illustrated.
- ✓ 8. POPULATION OF MARYLAND, 1900-1930 (By Minor Civil Divisions). 1935. Mimeographed. 39 pages.
- ✓ 9. CONSERVATION PROBLEMS IN MARYLAND. February 1935. Second Edition revised February 1936. Mimeographed. 62 pages.
- ✓ 10. ASSESSMENT AND COLLECTION OF MOTOR VEHICLE PROPERTY TAXES IN MARYLAND. February 1936. Mimeographed. 27 pages.
- ✓ 11. TEN YEARS' EXPENDITURES FOR PUBLIC WORKS, 1924-1933. April 1936. Mimeographed. 114 pages. Illustrated.
- ✓ 12. PRELIMINARY REPORT ON THE BALTIMORE-WASHINGTON-ANNAPOLIS REGIONAL PLAN. April 1936. Mimeographed. 12 pages.
- ✓ 13. FIRST REPORT OF MARYLAND MAPPING AGENCY: August 1936. Mimeographed. 25 pages.
- ✓ 14. REPORT ON MEN'S CLOTHING INDUSTRY. November 1936. Mimeographed. 149 pages. Illustrated.
- ✓ 15. SECOND REPORT OF MARYLAND MAPPING AGENCY. October 1937. Mimeographed. 44 pages. Illustrated.
- ✓ 16. REGIONAL PLANNING, PART IV, BALTIMORE-WASHINGTON-ANNAPOLIS AREA. November 1937. Printed. 65 pages. Illustrated. Price 40c.
- ✓ 17. REPORT ON FERTILIZER INDUSTRY. January 1938. Mimeographed. 98 pages. Illustrated.
- ✓ 18. PUBLIC HEALTH ADMINISTRATION IN MARYLAND. April 1938. Printed. 153 pages. Price \$1.00.
- ✓ 19. REPORT ON THE IRON AND STEEL INDUSTRY OF MARYLAND—BLAST FURNACES, STEEL WORKS AND ROLLING MILLS. November 1938. Mimeographed. 98 pages. Illustrated. Price 25c.
- ✓ 20. FIVE YEARS OF STATE PLANNING. December 1938. Printed. 65 pages. Illustrated.

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SPECIAL REPORTS

(Not available for distribution but may be examined at the office of the Maryland State Planning Commission)

- PRELIMINARY REPORT OF THE MARYLAND STATE PLANNING COMMISSION. August 12, 1934. Typed. 106 pages. Illustrated.
- PRELIMINARY REPORT OF DESIRABLE ADJUSTMENT IN RURAL LAND USE (to accompany Problem Area Map). September 22, 1934. Typed. 16 pages.
- PRELIMINARY REPORT—EROSION (to accompany Problem Area Map). October 1934. Typed. 5 pages.
- PROGRESS REPORT TO THE NATIONAL RESOURCES COMMITTEE. November 15, 1934. Typed. 4 pages.
- AREAS WHICH SEEM CAPABLE OF CLOSER SETTLEMENT (to accompany Closer Settlement Map). May 1935. Typed. 88 pages.
- SOME DESIRABLE ADJUSTMENTS IN RURAL LAND USE. May 1935. Typed. 276 pages. Illustrated.
- SURVEY OF FREDERICK COUNTY, WITH SPECIAL REFERENCE TO PUBLIC HEALTH, MEDICAL CARE, AND SOCIAL WELFARE. May 1935. Typed. 165 pages. Illustrated.
- PROGRESS REPORT OF THE LAND PLANNING CONSULTANT. June 10, 1935. Typed. 3 pages.
- INDEBTEDNESS OF GOVERNMENTS IN MARYLAND (tabulation). June 1935. Typed. 177 pages.
- SUMMARY REPORT OF THE WORK OF THE MARYLAND STATE PLANNING COMMISSION, JANUARY 1934 TO JUNE 1935. June 1935. Typed. 38 pages.
- SURVEY OF WICOMICO COUNTY, WITH SPECIAL REFERENCE TO PUBLIC HEALTH, MEDICAL CARE, AND SOCIAL WELFARE. August 1935. Typed. 138 pages. Illustrated.
- THE MARYLAND STATE PLANNING COMMISSION (Activities). October 1935. Printed. 6 pages.
- SURVEY OF GARRETT COUNTY, WITH SPECIAL REFERENCE TO PUBLIC HEALTH, MEDICAL CARE, AND SOCIAL WELFARE. November 1935. 131 pages. Illustrated.
- DATA ON ANNE ARUNDEL, HOWARD, MONTGOMERY, AND PRINCE GEORGE'S COUNTIES. 1935. Typed. 116 pages. Illustrated.
- DATA ON DORCHESTER, SOMERSET, WICOMICO, AND WORCESTER COUNTIES. 1935. Typed. 148 pages. Illustrated.
- DATA ON GARRETT, ALLEGANY, FREDERICK, AND WASHINGTON COUNTIES. 1935. Mimeographed. 119 pages. Illustrated.
- REPORT OF THE ACTIVITIES OF THE MARYLAND STATE PLANNING COMMISSION, DECEMBER 15, 1935; including Summary, January 1, 1936. Typed. 29 pages.
- REPORT OF THE ACTIVITIES OF THE MARYLAND STATE PLANNING COMMISSION, DECEMBER 15, 1935 TO JUNE 15, 1936. Typed. 41 pages. Illustrated.
- SURVEY OF ANNE ARUNDEL COUNTY, WITH SPECIAL REFERENCE TO PUBLIC HEALTH, MEDICAL CARE, AND SOCIAL WELFARE. August 1936. Typed. 150 pages.
- COMPREHENSIVE REPORT ON THE UPPER CHESAPEAKE BAY DRAINAGE BASIN. September 1936. Typed. 145 pages.
- COMPREHENSIVE REPORT ON THE POTOMAC RIVER DRAINAGE BASIN IN MARYLAND. October 1936. Typed. 102 pages.
- PROGRESS REPORT ON LOCAL CONTROL SURVEYS, JUNE 10, 1936 TO DECEMBER 31, 1936. Typed. 6 pages. Illustrated.
- WATER SUPPLY AND SEWAGE DISPOSAL SURVEYS. December 1936. Typed. 2 pages.
- RESUMÉ OF REPORT ON CONSERVATION PROBLEMS IN MARYLAND. 1936. Mimeographed. 24 pages.
- PRELIMINARY REPORT ON THE BALTIMORE-WASHINGTON-ANNAPOLIS REGIONAL PLAN. January 22, 1937. Mimeographed. 55 pages.
- PROGRESS REPORT TO THE NATIONAL RESOURCES COMMITTEE. February 6, 1937. Typed. 3 pages.
- ✓ UNITED STATES COMMUNITY IMPROVEMENT APPRAISAL—STATE OF MARYLAND. March 1938. Mimeographed. 363 pages. Illustrated.

